SIERRA CLUB

March 31, 2022

Cru Stubley
Public Service Commission
P.O. Box 7854
Madison, WI 53707-7854

RE: Quadrennial Planning Process IV Phase I Memorandum

Dear Cru Stubley,

Sierra Club appreciates the opportunity to comment on the Public Service Commission ("Commission") staff's Quadrennial Planning Process IV, Phase I Memorandum (hereafter referred to as "Phase I Memo"). Sierra Club supports many of the staff recommendations that would align Focus on Energy goals and program offerings with decarbonization goals, allowing Focus on Energy programs to support electrification programs that provide climate reduction benefits, but also public-health co-benefits, and the focus on affordability and energy burden that is present in many of the staff recommendations regarding low-income and income-qualified programs and offerings.

I. ALIGNING FOCUS ON ENERGY GOALS AND PROGRAM OFFERINGS WITH DECARBONIZATION GOALS

Sierra Club supports Alternative 1: *The Focus program should expand and enhance its role in cost-effectively reducing carbon emissions by emphasizing carbon emissions reduction benefits and energy use and demand savings.*

Alternative One provides the best opportunity to reduce the economic, environmental, safety, and public health risk factors associated with carbon emissions. First, prioritizing carbon emission reductions and energy use and demand savings will lower the state's dependence of imported fuels. The Governor's Climate Change Report noted that energy production outside of the transportation sector represents 57 percent of Wisconsin's greenhouse gas (GHG) emissions. In order to head off the climate crisis, the Commission must prioritize reducing carbon-intensity at fossil-fuel fired generation and focusing on building electrification and ways to decrease the

carbon intensity of industrial facilities. Each of these actions will reduce our state's dependence on imported fuels.

In addition, support of beneficial electrification and development of renewable energy will provide carbon-free, homegrown energy to offset the import of combustible fuels. Wisconsin has amazing renewable energy potential that is currently not being developed at the rate that it should because of current regulatory and economic factors. The Commission should support renewable energy development through Focus programs to reduce dependence on imported energy, keep energy dollars in our state economy, support jobs and growth potential, and reduce carbon emissions.

Sierra Club also supports **Sub-Alternative C:** *Direct the Work Group to develop recommendations to operationalize enhanced and tracking of the program's carbon emissions reduction impacts for the purposes of program evaluation and performance tracking.*

The Commission should prioritize the most robust and cost-effective approach to operationalize enhanced measurement and tracking of the Focus program's carbon emissions reduction impacts. The Commission should consider the development of Key Performance Indicators (KPIs) that allow benchmarking the performance of Focus across different regions and, hopefully, other states.

II. ELECTRIFICATION PROGRAMS AND OFFERINGS

Sierra Club supports **Alternative 1**: *Allow Focus to directly support beneficial electrification where fuel switching from unregulated fuels to electricity provided by a participating utility occurs through its own programs and offerings. Focus shall claim all fuel neutral energy savings and other associated social, economic, and environmental benefits, as approved by the Commission, for its own beneficial electrification programs and offerings.*

Building electrification has the potential to greatly reduce greenhouse gas emissions, but electrification will also provide significant air quality and public health benefits. Gas is a fossil fuel consisting of mostly hydrocarbons, the majority of which is methane (CH4)—a potent greenhouse gas (GHG). In Wisconsin, fossil gas is used in buildings for heating and cooking and in residences, common gas-powered appliances include stoves, ovens, furnaces, water heaters, clothes dryers, and fireplaces.

Gas appliances emit a wide range of air pollutants, such as carbon monoxide (CO), nitrogen oxides (NOx, including nitrogen dioxide (NO2)), particulate matter (PM), and formaldehyde, which have been linked to various acute and chronic health effects, including respiratory illness, cardiovascular disease, and premature death. Studies have found cooking with gas-fired stoves and ovens can lead to concentrations of NO2 that exceed the levels of national ambient air quality standards. Concentrations of CO and NO2 resulting from gas cooking are the highest for apartments, due to a smaller residence size. This presents an additional risk for renters, who are often low-income. Replacing gas appliances with high efficiency electric alternatives in residential and commercial buildings is a key strategy to reduce gas consumption because it takes less gas at the power plant to

generate electricity for a high efficiency electric appliance than is used on-site by even the most efficient gas appliances.[1]

As the Wisconsin grid becomes greener, the attainable greenhouse gas reductions become even more amplified.[2] As more and more large-scale renewable projects come online, they can begin to power electrified homes and business. This will create emissions-free buildings with home-grown electricity and also provide the co-benefits of reducing the health and environmental risks associated with emissions. Thus, Alternative 1, is consistent with the 1994 Energy Priorities Law as electrification supports enhanced and equitable access to energy, energy efficiency, and renewable energy.

The time to act on Alternative 1 is now. Continued investments in traditional gas appliances and new gas infrastructure creates long term GHG lock-in over the life of the appliances (10 to 20 years), new buildings built for gas (decades), and the new natural gas infrastructure to serve these new buildings (decades). Fast action by the Commission to remove barriers to lower-GHG alternatives will increase customer fuel choice, reduce lock-in of GHG emissions, and lower the cost of reducing emissions by 2030 and 2050.

Finally, programs designed to promote electrification should be explicitly designed to avoid excluding low-income households, including low-income renters. The potential transition from gas to all-electric home appliances could benefit low-income households and environmental justice communities by improving both indoor and outdoor air quality.[3] These communities face disproportionate air-pollution burdens and limited access to clean energy resources. As Mr. Colton found, "to the extent that electrification initiatives do not specifically address the ability to electrify the low-income households . . . not only will these low-income households be 'left behind' and thus subject to the health effects associated with the indoor air quality problems caused by natural gas appliance, but will also be 'left behind' and subject to the increased utility rates resulting from fixed costs being spread over an increasingly smaller customer base."[4]

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[1] *See*, *e.g.*, U.S. DOE, "Accounting Methodology for Source Energy of Non-Combustible Renewable Electricity Generation," Oct. 2016, https://www.energy.gov/eere/analysis/downloads/accounting-methodologysource-energy-non-combustible-renewable-electricity.

[2] *See*, *e.g.*, NREL, Electrification Futures Study: Scenarios of Power System Evolution and Infrastructure Development for the United States (Jan. 2021), available at https://www.nrel.gov/docs/fy21osti/72330.pdf. "The growing deployment of renewable energy technologies is expected to continue and is amplified by electrification (Figure ES-1), potentially to unprecedented levels (Figure ES-2)." "Due to several unique aspects of electrification—including how it changes load shapes, drives the increased deployment of flexible generation technologies, and could potentially expand demand-side flexibility—we find that it could lead to a more conducive environment for integrating variable renewable energy technologies."

[3] *See* Roger Colton Statement at pp. 4-6, attached.

[4] *Id.*

III. AFFORDABILITY – LOW-INCOME AND INCOME-QUALIFIED PROGRAMS AND OFFERINGS

The Commission has made commendable efforts to address energy affordability in the state. In its Roadmap to Zero Carbon Investigation (Docket 5-EI-158), for example, the Commission directed Staff "to conduct a workshop on performance-based regulation, which should include a review of considerations related to affordability; . . .and to conduct further analysis on issues related to customer affordability." (Order, at 1, Docket 5-EI-158, September 23, 2021). The staff have made great strides in addressing low-income customer affordability in many of its Phase I Memo recommendations as they provide an excellent direction for investments in low-income energy efficiency for the next four years. **Sierra Club lauds the staff for this effort and supports Alternative 1, Alternative 3, Alternative 4, Sub-Alternative A, and Sub-Alternative B**. Sierra Club in these comments and the attached Statement of Roger Colton provide additional support for these recommendations, along with some additional recommendations for your consideration.

> **Alternative 3**: *The Focus program should continue to offer income-qualified programs and should additionally explore developing a community-based pilot(s) in one or more targeted communities.*

Sierra Club enthusiastically supports a pilot program and recommends Milwaukee for the pilot program and a second payment-troubled customer targeting pilot program.

> *Pilot Program Recommendation: Milwaukee should be the location of the community-based pilot.*

The Phase I Memo discusses the importance of addressing home energy affordability. The Staff noted that a Workgroup on performance-based ratemaking ("PBR") addressed affordability issues in this docket.[5] According to the Staff Report, that Workgroup "noted that energy efficiency efforts can achieve multiple objectives and PBR should consider separate categories of metrics for low-income initiatives." The Staff and Workgroup should be commended for recognizing this need and should be supported for pursuing these efforts. The PSC should also consider the racial inequities that the Sierra Club identified with respect to home energy unaffordability in Milwaukee.

"Energy burdens" represent bills as a percentage of income. A household with an energy bill of $2,000 and an annual income of $20,000, for example, experiences an energy burden of 10% of income. Energy burdens that equal or exceed 6% of income are considered to be high energy burdens. High energy burdens harm households in numerous ways. High energy burdens not only threaten access to life sustaining home energy through nonpayment disconnections, but high burdens force "tough choices between paying energy bills and buying food, covering rent or mortgage payments, obtaining medical treatment and medicine, and accessing other life

[5] Phase I Memo at 57 – 58

essentials."[6] "Households with high energy burdens experience many negative long-term effects on health and well-being including a greater risk for respiratory diseases and increased stress."[7]

In 2021, Sierra Club issued a report that analyzed energy burden in Milwaukee, *Energy Burden in Milwaukee: Study Reveals Major Disparities & Links to Redlined Areas* (hereafter referred to as "*Milwaukee Burdens"*). High energy burdens in Milwaukee are not racially neutral. *Milwaukee Burdens* reports that 85,000 people, or roughly 6% of the Milwaukee metro population, live in high-energy-burden Census Tracts.

> *However, areas with high energy burdens are disproportionately Black and Hispanic/Latinx communities. While 16% of Milwaukee's metro population is Black, 65% of residents of high-burden neighborhoods are Black. 11% of the metro area population is Hispanic or Latinx, but 21% of the population in high-burden neighborhoods is Hispanic/Latinx.*

In contrast, *Milwaukee Burdens* reports that "while the Milwaukee metro area's white population is two-thirds of the total population, white residents only account for 9% of the population in high-burden neighborhoods."

The median energy burden for Milwaukee's Black and Hispanic/Latinx population is more than two times higher than Milwaukee's White population. While the median energy burden for Milwaukee's Black population is 5.0%, and for the city's Hispanic/Latinx population is 5.3%, the median energy burden for Milwaukee's White population is only 2.1%.

Finally, the *Milwaukee Burdens* study reports that while energy efficiency investments in the home, including improved efficiency of appliances and lighting, would help reduce high burdens, the very factors which contribute to the problem of high burdens also impede the use of efficiency investments. According to the study, "energy efficiency improvements to alleviate the cost burdens are largely inaccessible to low-income families, and awareness of programs is often low." The *Milwaukee Burdens* report concluded that more must be done:

> *Increasing investments in energy efficiency and affordability programs and targeting these initiatives to the communities that experience high energy burdens as laid out in this report is an important and necessary way to address the clear disparities. These programs can help reduce high energy burdens, make energy bills more affordable, and improve health disparities worsened by COVID-19.*

The Commission should also consider Milwaukee for the pilot program because of its concentration of Racially or Ethnically Concentrated Areas of Poverty" (R/ECAP). R/ECAP was developed by HUD to "assist communities in identifying racially/ethically-concentrated areas of

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[6] Sierra Club, *Energy Burden in Milwaukee: Study Reveals Major Disparities & Links to Redlined Areas,* Attached as Appendix C to Colton Statement.
[7] *Id.*

poverty (R/ECAPs)" and are census tracts with extreme poverty that have a non-white population of 50 percent or more. Wisconsin has 62 R/ECAP Tracts, 57 of which are located in Milwaukee. Energy burdens for the low-income population in the Milwaukee County R/ECAP census tracts are considerably higher than the energy burdens for the residential population as a whole in these census tracts (although even that is high). The energy burden for the low-income population of the 57 R/ECAP census tracts ranges from 8.3% to19.3%, with the median being 12.8%. The distribution of home energy burdens for all residential customers of 57 R/ECAP census tracts as a whole compared to the low-income residential customers of those census tracts is included in the table below.[8]

Table 13. Residential Energy Burdens/Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts			
	Residential		Low-Income (Subset of Residential)
Minimum	3.1%		8.3%
Maximum	9.6%		19.3%
Median	6.0%		12.8%
Distribution of Residential Energy Burdens and Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts			
Distribution of Residential Burdens		Distribution of Low-Income Burdens (Subset of Residential)	
<3%	0	<9%	4
3% - <6%	28	9% - <12%	14
6% - <7%	14	12%-<14%	19
7% - <8%	10	14%-<16%	11
8% - <9%	3	16%-<18%	7
9% or more	2	18% or more	2
Sum	57	Sum	57

One of the reasons that staff's Alternative 3 is so valuable and necessary, especially in Milwaukee County R/ECAP census tracts, is that the household characteristics of these tracts indicate that in the absence of Focus assistance, investments in energy efficiency would not take place. For example, one barrier is the low-household income for these R/ECAP census tracts. When someone worries about having money for rent or food each month, they will not "invest" money in energy efficiency. This lack of income is evident in the Milwaukee County R/ECAP census tracts. The non-weighted average ***annual*** income for

[8] See Colton Statement at p. 48, Table 13.

the First Quintile of income in these 57 Census Tracts in 2019 was $5,938. Even for the Second Quintile (those households between 20% and 40%), the non-weighted average Second Quintile income was only $15,754. In these 57 Census Tracts, in other words, 40% of the population had an annual income of less than $16,000, while 20% of the population had an annual income of less than $6,000.[9]

Another barrier is the tenure of residents. Being a tenant not only presents the "split incentive" problem, but it presents the problem of residents who would benefit from efficiency investments lacking "dominion interest" over the property and accompanying energy consuming systems and appliances. Tenants lack the authority to make decisions to improve their homes. In these 57 Milwaukee County R/ECAP Census Tracts, 74% of the occupied housing units are renter-occupied.[10]

Another barrier is the fact that low-income households tend to live in older homes in need of major investments, not merely upgrades to particular systems or appliances. In the 57 Milwaukee County R/ECAP Census Tracts, 81% of the tenants live in housing units that were constructed before building codes were enacted. Similarly, in these Census Tracts, 87% of the homeowners live in housing units that were built before 1970.[11]

These barriers which prevent low-income households from being able to invest in energy efficiency improvements are particularly evident in the R/ECAP census tracts in Milwaukee County. Further supporting that the staff's recommendation for a community-based pilot in one or more targeted communities should take place in Milwaukee and the R/ECAP census tracts in particular.

Sierra Club notes that Michigan has undertaken a geo-targeted energy-burden pilot with Consumers Energy that might serve as useful models for Wisconsin's pilot program. The Consumer's pilot program is discussed in detail in the Colton Statement and the Consumers Settlement Agreement, which is attached to the Colton Statement.

> ***Pilot Program Recommendation: At least two major electric and/or natural gas utilities should undertake a pilot "payment-troubled customer" program.***

Wisconsin should establish a pilot low-income payment-troubled customer program, ideally by having two of its major electric and/or gas utilities undertake these pilots. Sierra Club recommends that the utilities target low-income usage reduction investments based on the following non-exclusive[12] factors, but notes that these are targeting objectives, not ***eligibility*** criteria for low-income usage reduction.

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[9] *See* Colton Statement at p. 49.
[10] *See* Colton Statement at pp. 49-50.
[11] *See* Colton Statement at p. 50.
[12] By "non-exclusive," I mean that customers may fall into one or more of these categories.

- **High energy usage:** Research has shown that the single greatest predictor of energy usage reduction potential is high consumption prior to efficiency measures being implemented.

- **High arrearages:** Customers with high arrearages disproportionately tend to have high usage as well. Targeting low-income customers with high arrearages generates the following benefits: (1) high arrearages have been associated with a greater usage reduction potential; (2) directing usage reduction to low-income customers with high arrearages can reduce the utility's non-energy costs whether or not the arrearages are reduced to $0. For example, if usage reduction investments can help a low-income customer reduce his or her arrearage from $500 to $300, the utility pockets the working capital savings associated with carrying those $200 in reduced arrearages (along with a potential reduction in bad debt if those arrears are ultimately written off).

- **Broken/defaulted deferred payment arrangements:** A low-income customer on a deferred payment arrangement, by definition, is in arrears. To the extent that a customer has a history of negotiating a deferred payment arrangement, that customer has evidenced a willingness to work with a utility to address his or her nonpayment, even though the deferred payment arrangement default indicates that effort was unsuccessful. To the extent that usage reduction can reduce the bill for current service, the low-income customer is more likely to pay that total asked-to-pay amount. Not only will the ultimate risk of lost revenue due to nonpayment be reduced, but the immediate working capital associated with any delayed collection of revenue will be reduced as well. Defaulting on a deferred payment arrangement should be an indicator of payment-troubled status for purposes of targeted low-income usage reduction.

- **Disconnection for nonpayment:** A disconnection (or multiple threats of disconnection) of service for nonpayment within the immediately preceding two-year period should establish payment-troubled status for purposes of targeting usage reduction. A disconnection for nonpayment is the ultimate indicator of payment-troubled status. Even if the disconnection was avoided subsequent to the issuance of a notice, that level of payment-trouble should prioritize a household for low-income usage reduction services.

As part of this Pilot, Wisconsin utilities should engage their credit and collection records as a means to identify low-income households that might benefit from participation in the proposed low-income usage reduction program.[13] A utility should routinely inquire of its customer information system which customers meet the targeting criteria outlined above. The resulting lists of tagged customers generated should be provided to community-based organizations working with, and

[13] *See generally*, Colton (1999). *The Use of Utility Data Processing Records as a Data Mining Source on Low-Income Consumers: Converting Information to Knowledge*, prepared for Affordable Comfort, Inc. (1999).

under contract to, each utility for those community-based organizations to engage in the outreach and intake process.

Sierra Club notes that Michigan has undertaken a Payment-Troubled Targeting Pilot with DTE that might serve as useful models for Wisconsin's pilot program. The DTE pilot program is discussed in detail in the Colton Statement and the DTE Settlement Agreement, which led to this pilot program, is attached to the Colton Statement.[14]

> **Alternative 1:** *The Focus program should continue to offer income-qualified programs but explore more offerings that cross into the 60 percent of SMI currently operated by DOA*
>
> **and**
>
> **Alternative 4:** *The Focus program should continue to offer income-qualified programs at the 60 to 80 percent SMI.*

The Staff Report posits two different "alternatives" involving the definition of "low-income" for purposes of offering "income qualified" programs. Alternative 1 proposes that Focus should continue to offer income-qualified programs to households with income at or below 60% of the State Median Income ("SMI") and Alternative 4 proposes that Focus should also continue to offer income-qualified programs to households with income greater than 60% SMI but at or below 80% SMI. Sierra Club recommends that the Commission should approve both Alternative 1 and Alternative 4.

Wisconsin's income for a three-person household at 60% of SMI is $46,318 and at 80% of SMI is $61,757. Whether these two income limits (60% SMI, 80% SMI) reasonably capture low-income status for purposes of the design of Focus programs can be assessed by comparing these income figures to Wisconsin's Self-Sufficiency Standard developed for the Wisconsin Department of Workforce Development.

The Self-Sufficiency Standard was prepared for the State of Wisconsin by the Center for Women's Welfare ("CWW") at the University of Washington. According to CWW, the Self-Sufficiency Standard "defines the income working families need to meet a minimum yet adequate level, taking into account family composition, ages of children, and geographic differences in costs. The Standard is an affordability and living wage economic security measure that provides an alternative to the official poverty measure."[15] The Standard presents the dollars of income needed to be self-sufficient in each Wisconsin county for 719 different families of varying family sizes and compositions. The Self-Sufficiency Standard is set by county.

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[14] *See* Colton Statement at pp. 52-53 and Appendix F.
[15] *See* Colton Statement at p. 44.

In Appendix B to the Colton Statement, Roger Colton presents the Self-Sufficiency Standard for all 81 Wisconsin counties for six different three-person households—a 3-person household is a typical household size in Wisconsin. Table 12 below summarizes the lowest (minimum) and highest (maximum) Self-Sufficiency Standard for the families studied in the 81 Wisconsin counties, along with the median. As can be seen, using either 60% or 80% of the State Median Income will result in an under- or over-estimation of financial needs when applied to individual counties in Wisconsin. Nonetheless, the 60% SMI figure reasonably reflects the median Self-Sufficiency Incomes (3-person), while the 80% SMI figure reasonably reflects the maximum Self-Sufficiency Incomes (3-person).

Table 12. Minimum and Maximum Self-Sufficiency Standard ("SSS"): Six 3-person Families Amongst the 81 Wisconsin Counties in Appendix B

	Adult/Infant/ Preschooler	Adult/ Preschooler/ School-age	Adult/ School-age (x2)	2 Adults/Infant	2 Adults/ Preschooler	2 Adults/ School-age
Minimum SSS	$40,828	$38,186	$36,572	$39,899	$38,755	$37,102
Maximum SSS	$77,741	$69,243	$64,318	$63,366	$60,679	$55,717
Median SSS	$51,679	$49,320	$48,214	$46,771	$46,115	$44,017
60% SMI (3-person)	$46,318	$46,318	$46,318	$46,318	$46,318	$46,318
80% SMI (3-person)	$61,757	$61,757	$61,757	$61,757	$61,757	$61,757

This indicates it is reasonable to have a two-tiered Focus program, with one tier being directed toward households with income at or below 60% of SMI and the second tier being directed toward households with income greater than 60% SMI but at or below 80% of SMI, and appears to be supported by the data.

Sub-Alternative A: *Direct the Focus Program Administrator to convene a stakeholder group that includes community-based organizations that work with marginalized communities to gather input on effective methods to reduce barriers in order to effectively reach these customers.*

Sierra Club supports Sub-Alternative A and it agrees with staff that community participation is essential to successful implementation and also advances goals outlined in the Governor's Climate Change Report.

The Governor's Climate Change Report discussed "climate justice and equity" and notes the EPA's definition of environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."[16] The Climate Change Report went on to note that in "practice, achieving environmental justice means guaranteeing that these vulnerable communities receive equal protection from environmental and health hazards, and equal access to the decision-making process that determines their economic and energy outcomes."[17] The Climate Change Report went on to state "[w]ithout careful design, planning, and community input, programs designed to decarbonize the energy sector may have unintended consequences that worsen inequity. Low-income households face higher energy burdens (the portion of income spent on energy bills) and greater energy insecurity than higher-income households, and also face disproportionately high health impacts from indoor and outdoor air pollution. Because of this, low-income customers can most directly benefit from energy efficiency programs and renewable energy projects, but the planning, design, and implementation of the programs and projects must be undertaken with input from these communities to ensure that all aspects are undertaken to maximize the benefit on these communities."[18]

Sub-Alternative A carries forward these equity concerns to the Focus program and the Commission should approve them. The Phase I Memo noted that community engagement is an important priority: "This category assesses how well the organization is engaging with income-qualified customers to involve them in all aspects of decision-making and participation. How well did the program team engage with this community during the design, delivery, and evaluation stages of the program?"[19]

The Commission should ensure that Focus planning, funding, and implementation decisions provide for meaningful public participation. The Commission should find that the following would be considered "meaningful public participation":

[16] Governor's Climate Change Report, at 22.
[17] Governor's Climate Change Report, at 22.
[18] Governor's Climate Change Report, at 28.
[19] Phase I Memo at 99.

- Meaningful public participation means that: (1) people have an opportunity to participate in decisions about programs and policies that may affect their environment or their health; (2) the public's contribution can influence the decision-making process; (3) community concerns will be considered in the decision-making process; and (4) decisionmakers will seek out and facilitate the involvement of those potentially affected.

Additionally, the Commission should adopt the Staff recommendation that specific KPIs be adopted with respect to "community engagement" or "meaningful public participation." Here is a list of potential KPIs:

- Proactive steps to community engagement such as: (1) facilitating ongoing opportunities for direct interaction between agencies and communities; (2) allocating funding for staff positions trained and dedicated to community outreach and facilitating collaborations; (3) choosing arrangements for community interactions to maximize effective participation, taking into account factors such as meeting times, locations, and translation needs; (4) ensuring that affected individuals and communities have access to sufficient information to enable them to meaningfully participate in activities; (5) ensuring sufficient time for meaningful interaction before decisions have been made or unalterable commitments entered into; and (6) ensuring transparency in decision-making.

- Meaningful public participation means that: (1) potentially affected community residents have an appropriate opportunity through a process, not merely an event, to participate in decision-making about a proposed program or policy that may affect their access to safe, clean, affordable, adequate, sufficient and accessible services; (2) the contribution of the public can influence the provider's decision-making; (3) the concerns of the public will be considered in the decision-making process; (4) the decision-makers seek out and facilitate the involvement of those potentially affected; and (5) the decision makers undertake actual documented consideration of the public input received.

- Meaningful public participation requires that stakeholders shall be able to access adequate, accessible and necessary information as soon as it is known, to allow them to prepare to participate effectively, in accordance with the principle of maximum disclosure.

- Relevant information shall be proactively disseminated by making it available in a manner appropriate to local conditions and taking account of the special needs of individuals and groups that are marginalized or discriminated against.

- Relevant information shall be provided free of charge or at a reasonable cost and without undue restrictions on its reproduction and use both offline and on-line.

- Decision-makers shall refrain from taking any formal, irreversible decisions prior to the commencement of the process. No steps shall be taken that would undermine public participation in practice, such as large investments in the direction of one option, including those agreed with another agency, a non-government actor, or state or local government entity, or some combination thereof.

Sub-Alternative B: *Direct the Focus Program Administrator to develop KPIs for income-qualified programs for the Commission's consideration in Phase III of Quad Planning.*

Sierra Club supports Sub-Alternative B and it agrees with staff that the development of KPIs is an important tool needed in the design and evaluation of energy efficiency and emission reduction programs in Wisconsin.

Sierra Club recommends that the Commission adopt outcome-based[20] KPIs, rather than activities[21]- or outputs-based[22] KPIs. "While the Staff Report does not discuss KPIs in terms of "outcomes," the discussion it presents appears to be based on an assessment of outcomes. This is important as it shifts the focus from performance activities to performance results.

Many utilities have a difficult time moving from measuring program activities to establishing results-oriented goals and performance measures. Sierra Club recommends that the Commission adopt KPIs that push utilities to move beyond what they control–their activities–to focus on what they merely influence–their results.

These outcome-based KPIs[23] that Sierra Club is recommending offer many advantages. First, these measurements do not allow the low-income population to be treated with low-cost, but low-savings measures. The "inequity" in such treatments would routinely appear in Equity Ratios consistently less than 1.0. Second, these measurements can easily be modified to reflect particular interests of areas of inquiry. For example, one area of inquiry might involve a comparison not of low-income households to residential households, but rather of low-income households in "vulnerable" areas (e.g., R/ECAP census tracts) to low-income households generally. Participation is a more difficult KPI to measure for low-income households. The purpose of a "participation" KPI should not be to distribute "education" materials or low-cost, but low-savings, measures (e.g., self-installed high efficiency lightbulbs or kits with low-flow aerators) to a large percentage of the low-income

[20] Outcome-based KPIs are the program accomplishment attributable to program outputs.
[21] Activity-based KPIs are the work performed that directly produces products or services.
[22] Output-based KPIs are the direct result of program activities.
[23] These Outcome based KPIs are based on an equity-plus standard that keeps the focus of the equity assessment on the recipient of resources rather than on the provider of resources. The equity-plus standard moves beyond an analytic focus on whether equitable dollars are being expended and instead focuses on what is accomplished by the person on whose behalf those resources are expended.

population. The purpose of participation should be to engage low-income households in whole-house energy-efficiency treatments. Establishing a participation KPI thus requires setting a Focus objective of the level of desired participation. The KPI then measures the extent to which that objective has been achieved. For Wisconsin, a reasonable low-income participation objective is to establish that it intends to treat 50% of all income-eligible households with energy efficiency needs within a ten-year period.

Sierra Club recommends that the Commission adopt the following KPIs to measure outcomes of low-income Focus programs and participation.

Low-Income Key Performance Indicators.

- *Outcome measured:* Is Focus achieving the same savings in low-income homes as in non-low-income homes?

  Metric: Ratio of the percent of low-income energy savings per home to the percent of residential savings per home. A ratio of 1.0 is an indicator of equity.

- *Outcome measured:* Is Focus reaching a proportionate share of low-income homes with deep savings?

  Metric: Ratio of the sum of the average kWh shared per home times the number of low-income homes treated to the average kWh shared per home times the number of residential homes treated. A ratio equal to the percentage of income-eligible households amongst all households is an indicator of equity.

- *Outcome measured:* Is Focus achieving the same carbon reduction in low-income homes as in non-low-income homes?

  Metric: Ratio of the average carbon reduction in low-income homes to average carbon reduction in residential homes. A ratio of 1.0 is an indicator of equity.

- *Outcome measured:* Is Focus allowing low-income customers to make payments and to avoid arrears at the same rate as residential customers do?

  Metric: Ratio of the percentage of revenue in arrears in treated low-income homes to percentage of revenue in arrears in residential homes. A ratio equal to 1.0 is an indicator of equity.

- *Outcome measured*: Is Focus allowing low-income customers to pay the same percentage of their bills as residential customers pay?

Metric: Ratio of the payment coverage ratio (i.e., dollars of payments divided by dollars of bills) for treated low-income households to the payment coverage ratio in residential households. A ratio equal to 1.0 is an indicator of equity.

- *Outcome measured:* Is Focus generating a substantive improvement in low-income home energy burdens through a reduction in energy usage?

  Relevant Discussion: In measuring the impacts on energy burdens, it would be unreasonable to establish an objective of using Focus to achieve an affordable burden for all treated households. Some households have high energy burdens not because of high energy use, but rather because of very low incomes. In these instances, achieving an affordable burden is not a function of energy efficiency standing alone, but rather a function of combining energy efficiency with bill assistance. The outcome desired from Focus is an improvement in energy burdens. For instance, an energy burden reduced from 20% of income to 12% of income (an improvement even though the burden is still "unaffordable") may be even more important than an energy burden reduced from 9% of income to 5% of income.

  Metric Option 1: The Home Energy Burden before energy efficiency treatment minus the Home Energy Burden after energy efficiency treatment.

  Metric Option 2: The percentage reduction in home energy burden subsequent to receiving energy efficiency treatment. For example, if the pre-treatment burden is 20% and the post-treatment burden is 12%, the percentage reduction would be 8%.[24]

Participation Key Performance Indicators

- *Outcome measured:* Is Focus on-track to meet its ten-year participation objective?

  Metric: Cumulative percentage of income-eligible low-income households with weatherization needs treated.

[24] An example was provided to illustrate this option because some would say that the percentage reduction is 40% ([20% - 12%] = 8% / 20% = 40%). You don't want to think of it this way as it could mean that relatively small reductions would generate big percentage reductions if the pre-treatment burden is small enough. For example, doing it this way would allow one to view a reduction from 5% to 3% the same as a reduction from 20% to 12%, since both reductions are 40% of the pre-treatment burden. But the latter is a far more valuable energy burden reduction.

Additional Recommendations for your Consideration

Low-income measures should be 100% subsidized / direct-installed measures.

The data presented in the Colton Statement supports the conclusion that low-income customers do not have the capacity, and often do not have the authority, to make investments that require out-of-pocket expenditures. Programs that are based exclusively, or primarily, on the effectiveness of "consumer education" or "consumer incentives" are likely to be an ineffective mechanism by which to reach low-income households. Sierra Club recommends that low-income measures should be 100 percent subsidized or directly-installed measures.

Deep efficiency savings (including electric savings) should be the objective.

The data presented in the Colton Statement supports the conclusion that energy efficiency measures, generally, will not be within the capacity of low-income households to adopt without external assistance. This inability extends not merely to space heating (furnaces, air-sealing, insulation), but to electric appliances as well. When low-income homes are treated with energy efficiency measures, they should be treated on a whole-house basis, including the replacement of appropriate electric appliances. This will also lead to deeper carbon reductions and is an important step toward climate justice.

Focus should incorporate a special focus on low-income multi-family dwellings.

Treating multi-family housing with energy efficiency is particularly important when one seeks to reach a lower-income recipient population. In Wisconsin, 35 percent of all rental housing consists of housing units with five or more units in the structure. It is well-established that there is significant potential for energy efficiency savings in the multi-family housing sector—energy efficiency in multi-family housing could be improved by about 30 percent. One reason for this is the relatively older age of multi-family housing relative to single-family housing. Wisconsin's energy efficiency and electrification programs funded through Focus should ensure that multi-family units are not unreasonably excluded. Rather, because of the unique barriers presented by multi-family units and the unique potential for generating usage and emission reductions, a special focus on low-income multi-family units is recommended.

There should be an explicit approval of allowed non-energy saving expenditures (e.g., health and safety measures).

Low-income participation is often impeded by the presence of health and safety problems with a home. Health and safety issues associated with old and lower quality housing often prevent the

delivery of energy efficient products and services ("walkaways") for both single-family and multi-family buildings. Health and safety issues might include roof repair, asbestos removal, mold removal, water infiltration repair, knob and tube wiring replacement, structural repairs, and pest control. The Commission should determine that Focus should allow for reasonable expenditures on health and safety remediation needed to proceed with low-income energy efficiency investments. These remediation expenditures should supplement and not supplant dollars that are otherwise available for energy efficiency measures. Hopefully, in a subsequent phase of this Quad IV docket, the Commission can evaluate and determine the appropriate funding level for health and safety repairs.

There should be a focus on low-income electrification in addition to low-income efficiency.

Programs designed to promote electrification should be explicitly designed to avoid excluding low-income households, including low-income renters. As discussed in the Electrification Section above, electrification provides carbon reduction, as well as public health and environmental co-benefits.

Attempting to achieve these environmental co-benefits will be especially important for certain areas of Milwaukee. For the 57 R/ECAP Census Tracts in Milwaukee County, the asthma rate ranges from 10% to 15% and data presented in the Colton Statement demonstrate that these R/ECAP census tracts have disproportionally higher asthma rates than other areas of Milwaukee. If electrification initiatives do not specifically address the ability to electrify the low-income households, not only will these low-income households be "left behind" and thus subject to the health effects associated with the indoor air quality problems caused by natural gas appliance, but will also be "left behind" and subject to the increased utility rates resulting from fixed costs being spread over an increasingly smaller customer base.

The Commission should make an express finding that there is a lack of conflict between low-income decision-making and other aspects of the Quad IV proceeding.

The set of recommendations of the staff Phase I Memo are very strong, especially when complemented by Sierra Club's additional recommendations, and Sierra Club recommends that the Commission find that "[d]ecision alternatives for other Phase I issues do not conflict with the decision alternatives for this issue. Decisions on this issue will directly align with multiple decisions in Phase II of Quadrennial Planning Process IV."[25] Indeed, not only do the decision alternatives for other Phase I issues "not conflict" with low-income decision making, as can be seen in the recommendations above, they frequently, if not generally, specifically support and enhance those other decisions.

[25] Phase I Memo, Attachment 1 at p. 3.

Additional Income Data Collection

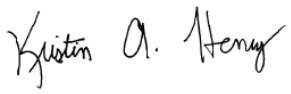
To help design and implement Focus programs, Sierra Club recommends collection of the following data:[26]

1. The dollars of bills for current service by month[27].
2. The dollars of actual receipts from customers by month.
3. The number of accounts[28] receiving a bill by month.
4. The number of accounts making a payment by month.
5. The number of disconnect notices issued by month.
6. The number of accounts in arrears;
7. The dollars of arrears by month;
8. The average arrears of accounts with arrears by month;
9. Conversely, the number of accounts with a $0 balance by month;
10. The number of Final Bills by month;
11. Pre- and post-treatment energy burdens.

Conclusion

Sierra Club appreciates the Commission and staff's focus on each of these issues and looks forward to engaging throughout the Quad IV process.

Sincerely,



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[26] *See* Colton Statement at pp. 61-62.
[27] The term month means that monthly data should be collected, however, monthly data could be filed on a bi-annual or on an annual basis.
[28] The term accounts is limited to recipients of low-income energy efficiency investments.

PUBLIC SERVICE COMMISSION OF WISCONSIN

Quadrennial Planning Process IV	* * * * * * *	**5-FE-104**

Statement of Roger Colton
On Behalf of:
Sierra Club

March 31, 2022

* *

My name is Roger Colton. I am a principal in the firm Fisher, Sheehan & Colton, Public Finance and General Economics, of Belmont, Massachusetts. I have prepared this Statement for the Sierra Club in the Wisconsin Public Service Commission's ("PSC") Quadrennial Planning Process IV ("Quad IV"). A summary of my professional credentials is presented in Appendix A to this Statement.

My Statement discusses the low-income energy efficiency for low-income households. My Statement is divided into the following parts:

I. **Part 1** (page 2, *et seq.*) summarizes why it is important to ensure an equitable distribution of energy efficiency investment in low-income households because of the disproportionate adverse impacts that climate change imposes on low-income households;

II. **Part 2** (page 7, *et seq.*) discusses the reasons why low-income customers are not able to implement energy efficiency, whether as a means to address climate change or as a means to improve bill affordability on their own. This section identifies several of the barriers which impede, if not completely bar, low-income investment in energy efficiency and why addressing low-income needs through Focus is important.

III. **Part 3** (page 18, *et seq.*) discusses how the Commission should objectively define and implement the concept of "equity" (or "equitable distribution"). In this section, I further discuss the relationship between low-income energy efficiency and low-income energy affordability;

IV. **Part 4** (page 36, *et seq.*) identifies specific recommendations regarding the form of low-income energy-efficiency investments. I commend the Staff Memo as it acknowledges that there be "some form" of income-qualified programs, and recommends specific program components. My recommendations are designed to supplement, not to supplant, the "Alternatives" set forth in the Staff Memo.

V. **Part 5 (**page 43, *et seq.*) discusses how the Focus programs should define income eligibility.

VI. **Part 6** (page 46, *et seq.*) examines the "pilot projects" discussed in the Wisconsin PSC Quad IV Staff Memo (March 8, 2022) (hereafter "Staff Memo") and makes recommendations;

VII. **Part 7** (page 54, *et seq.*) examines elements of community participation and transparency that the PSC should incorporate into the Focus programs.

VIII. **Part 8** (page 57, *et seq.*) discusses Key Performance Indicators ("KPIs") in the delivery of low-income energy efficiency. In this section, I also discuss additional data collection that the PSC should require independent of KPIs.

I. Low-Income Households and Climate Change.

Because of the disproportionate adverse impacts that climate change imposes on low-income customers, the Wisconsin PSC should not only reference "equity" in its Quad IV discussions, but it should explicitly incorporate equity into its funding and program design. Below I outline a conceptual foundation for how to explicitly incorporate "equity considerations" into Quad IV decision making. I then analyze Wisconsin-specific data to inform my recommendations on how the PSC should consider equity in the design, implementation, and funding of Focus programs.

The Staff Memo begins its discussion of low-income programs with a historical review. Staff notes that "Focus has historically offered some form of income-qualified programs, currently defined as customers with household incomes between 60 and 80 percent of state median income (SMI). These programs are distinct from the Department of Administration's (DOA) Weatherization programs which serve low-income customers at 60 percent of SMI or below." (Staff Memo, at 81). The Staff Memo reviews the types of low-income programs offered and notes that historically, 14% of the total spending on the residential portfolio has been on income-qualified programs. (Staff Memo, at 91). Moreover, Staff notes that "[i]f incentive spend for 2022 is in the same range as it was in

2021 for all programs listed above plus the pilots, the total [income qualified] incentive spend would be approximately 19 percent of total incentive expenditures in the Residential Portfolio." (Staff Memo, at 92).

I build on the Staff's review and offer constructive suggestions on why an increased spending level is appropriate for low-income customers.

The Wisconsin PSC should explicitly acknowledge findings in the *Governor's Task Force on Climate Change Report* (December 2020) regarding the disproportionate adverse impacts that climate change imposes on low-income households. The Governor's *Climate Change Report* states:

> Climate change is not only an issue of GHG emissions and global temperatures. As the climate shifts, human lives—particularly those in communities of color, low-income communities, immigrant communities, communities with limited English proficiency (LEP), and Indigenous communities—are affected by compromised health, financial burdens, and social and cultural disruptions. The ones primarily causing climate change are NOT (emphasis in original) the ones being disproportionately harmed by it. More affluent countries on a global level and more affluent communities within the U.S. and Wisconsin have a much larger carbon footprint. Yet it is less affluent countries and communities who bear the greater burden. Climate justice reorients climate discourse from focusing solely on reducing emissions and recasts it as a human rights movement, centering the communities most vulnerable to climate change's impacts in its solutions.

The Governor's *Climate Change Report* continues to note:

> According to the EPA, many factors affect a community's ability to prepare for, respond to, and cope with climate change's health impacts, including:
>
> - Living in areas particularly vulnerable to climate change (e.g., coastal communities),
> - Coping with higher levels of existing health risks when compared to other groups,
> - Living in low-income communities with limited access to healthcare services,
> - Having high rates of uninsured individuals who have difficulty accessing quality healthcare,

- Having limited availability of information and resources in a person's native language, and
- Less ability to relocate or rebuild after a disaster.

The Governor's *Climate Change Report* concludes:

> Climate justice is an extension of environmental justice, a movement born out of the U.S. Civil Rights Movement of the 1960s. The EPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." In practice, achieving environmental justice means guaranteeing that these vulnerable communities receive equal protection from environmental and health hazards, and equal access to the decision-making process that determines their economic and energy outcomes.

(*Governor's Climate Change Report*, at 22, internal notes omitted). The PSC should acknowledge and affirmatively incorporate this discussion into its Quad IV deliberations. Four recommendations from the Governor's *Report* are applicable in this proceeding, including: (1) Recommendation #3 (page 26): mandate a racial disparity study; (2) Recommendation #5 (page 29): improve data collection; (3) Recommendation #7 (page 32): increase energy use reduction goals; and (4) Recommendation #8 (page 53): expand Focus funding.

Data unquestionably supports the Governor's *Climate Change Report* conclusions that the adverse impact of environmental pollution falls disproportionately on disadvantaged communities. In 1971, the U.S. Council on Environmental Quality found not only that a correlation existed between income and the risk of toxic exposure, but also that the lack of income impeded the ability of the urban poor to improve their environment. These populations, were simply too poor to move.[1]

Innumerable studies have found that low-income households, along with persons of color, are disproportionately exposed to pollution.[2] One of every four American children lives in an area that regularly exceeds federal ozone standards. Half the pediatric asthma population–two million children–live in these areas. African-American children suffer

[1] Council on Environmental Quality (August 1971). Environmental Quality: The Second Annual Report of the Council on Environmental Quality, 189 – 190, U.S. Government Printing Office: Washington D.C.

[2] Lester et al., Environmental Injustice in the United States: Myths and Realities, 9 *et seq.* (2001).

from asthma at about twice the rate of white children, and die from asthma at more than four times the rate.[3] Moreover:

- The relationship of these adverse health outcomes to energy consumption and its related pollution is quite unmistakable. "In a study done in the Bronx by researchers at the New York University School of Medicine, it was found that on days when air pollution, particulate matter levels, nitrogen oxide levels, and sulfur dioxide levels were at their highest, the severity of asthma symptoms doubled among the studied individuals."[4]

- Minorities disproportionately live in areas subjected to air pollution. More than 80 percent of Hispanics and 65 percent of African Americans live in 437 counties with substandard air quality, yet only 57 percent of Whites do. More than 68 percent of Blacks live within 30 miles of a coal-fired power plant–the distance within which the maximum effects of the smokestack plume are expected to occur–while only 56 percent of Whites do.[5]

- Climate change threatens minorities with greater health risks attributable to heat waves. By the Year 2100, extreme heat waves that historically occurred once every 20 years are predicted to occur every other year.[6] Blacks are twice as likely as Whites to die from a heat wave.[7]

This is only a piece of the problem as it is not merely "outdoor" climate-induced health effects that usage reduction programs can prevent. Since Americans spend 67% of their time in their homes, indoor air quality also affects health. Indoor air pollutants have been ranked among the top five environmental risks to public health and linked to cancer, asthma, and carbon monoxide poisoning.[8] While outdoor air quality is subject to regulation under the federal Clean Air Act, indoor air quality is not.

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[3] Shafiei, "Reducing Health Disparity Through Healthy Housing," *in* Healthy & Safe Homes: Research, Practice and Policy, 76 (Rebecca L.Morley et al. eds., 2011).

[4] New York State Energy Plan, Environmental Justice Brief, New York State Energy Plan 2009, 10 (Dec. 2009).

[5] Bullard, Blacks and Latinos on the Frontline for Environmental Justice: Strengthening Alliances to Build Healthy and Sustainable Communities (Oct. 2008).

[6] Kaswan (2012). "Domestic Climate Change Adaptation and Equity," 42 Environmental L.Rep. News & Analysis 11125.

[7] Cong. Black Caucus Found., African Americans and Climate Change: An Unequal Burden 10 (2004).

[8] The purpose of this discussion is not to comprehensively document the relationship between housing quality and adverse health outcomes. Those interested in the topic should explore the literature of "ecosocial epidemiology." *See generally* Shafiei, "Reducing Health Disparity through Healthy Housing," *in* Healthy and Safe Homes: Research, Practice and Policy Chapter 4, pp.73-90 (Rebecca Morley et al. eds., 2011). *See also* Krieger, "Theories

The confluence of the harms associated with outdoor air quality and indoor air quality cannot be ignored. One consistent piece of advice given to people on how to avoid the adverse impacts of poor outdoor air quality is to remain indoors.[9]

> This advice is based on the assumption that indoor air quality is superior to outdoor air quality. But this means that people whose indoor air quality is compromised may be more susceptible to adverse health effects from indoor air than the population at large. Low-income people and African-Americans are much more likely to be exposed to, and therefore suffer the effects of poor indoor air quality than the general population. So, the advice to stay indoors might be good for the majority of people but bad for a minority: the same minority that tends to suffer other disparate environmental impacts. This problem goes to the heart of why green affordable housing is a matter of environmental justice.[10]

In short, environmental justice communities have the least resilience to reduce their vulnerability to air quality. When indoor air quality is just as dangerous as outdoor air quality, or when indoor air temperatures are just as deadly as extreme heat outdoors, there is, quite simply, no place to hide.

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for Social Epidemiology in the 21st Century: An Ecosocial Perspective," 30 Int'l J. Epidemiology 668, 671-673 (2001). For a discussion of the positive health impacts flowing from an improvement in housing quality, see generally, Thompson et al., "The Health Impacts of Housing Improvement: A Systematic Review of Intervention Studies from 1887 to 2007," 99 Am. J. Public Health S681 S682-S689, S690-S691(2009).

[9] *See e.g.*, Laumbach, Meng and Kipen "What can individuals do to reduce personal health risks from air pollution?" J.Thorac.Dis. 2015 Jan; 7(1): 96–107.

[10] Foy, Home is where the Health Is: The Convergence of Environmental Justice, Affordable Housing, and Green Building, 30 Pace Envl L. Rev. 1, 44 (Fall 2012).]

II. Why Low-Income Investment in Energy Efficiency Cannot and Will Not Occur without Programs such as Those Recommended by the Staff Memo.

Wisconsin-specific data demonstrates the need for enhanced attention to low-income needs in the design, implementation and funding of Focus programs. Without such attention, low-income households will be "left behind," not only in their ability to avoid public health impacts, but also in their ability to reduce energy consumption and greenhouse gas emissions by electrifying their end-use consumption. Only through approval of recommendations such as those set forth in the Staff's "Alternatives" will low-income households not face the climate change harms identified above.

The data that I examined for this proceeding supports the following conclusions:

Conclusion #1: While one common piece of advice to avoid the adverse impacts of climate-change induced poor air quality is to "go indoors," going indoors is often not a helpful option for poor people in Wisconsin. Table 1 sets forth data on how frequently a home is "drafty." Data is from the Department of Energy's 2015 Residential Energy Consumption Survey ("RECS"), the most recent RECS for which data is publicly available and contains data for the East North Central ("ENC") Census Division, the Wisconsin part of Census division.

There is a clear relationship between income and the draftiness of a home. While 16% of the ENC population has an annual income below $20,000, 31% of that population reports that their home is drafty "all the time," while 26% report that their home has a draft "most of the time." In contrast, as incomes increase, the frequency with which households report their homes as being frequently drafty substantially declines.

Table 1. Income by How Frequently Homes is Drafty (East North Central) (2015 RECS)					
Annual Income	**All the Time**	**Most of the Time**	**Some of the Time**	**Never**	**Grand Total**
Less than $20,000	31%	26%	13%	15%	16%
$20,000 - $39,999	23%	25%	28%	25%	26%
$40,000 - $59,999	22%	16%	16%	13%	15%
$60,000 - $79,999	9%	10%	16%	19%	16%
$80,000 - $99,999	8%	10%	8%	11%	9%
$100,000 - $119,999	0%	5%	5%	7%	6%
$120,000 - $139,999	0%	4%	6%	4%	5%
$140,000 or more	7%	3%	7%	6%	6%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**

Similarly, Table 2 sets out the RECS data on how well insulated homes are disaggregated by level of income. While households with income of less than $20,000 represent 16% of the total population, they represent 58% of the population reporting that their homes are "not insulated." In contrast, while households with income exceeding $80,000 represent 26% of the total population, they represent 32% of the population with "well-insulated" homes. Lower income households are under-represented in the population with well-insulated homes. While households with income less than $40,000 represent 42% of the population, they represent 37% of the population with well-insulated homes.

Table 2. Income by Adequacy of Insulation (East North Central) (2015 RECS)					
Annual Income	**Well-Insulated**	**Adequately Insulated**	**Poorly Insulated**	**Not Insulated**	**Grand Total**
Less than $20,000	16%	14%	22%	58%	16%
$20,000 - $39,999	21%	28%	30%	0%	26%
$40,000 - $59,999	13%	14%	21%	0%	15%
$60,000 - $79,999	18%	18%	8%	0%	16%
$80,000 - $99,999	10%	10%	6%	22%	9%
$100,000 - $119,999	9%	5%	5%	0%	6%
$120,000 - $139,999	5%	4%	6%	19%	5%
$140,000 or more	8%	7%	2%	0%	6%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**

Retreating inside to avoid the dangers of extreme heat, or poor outdoor air quality, does not represent the sanctuary for low-income households that it represents for higher income households. The dangers of indoor air quality being as bad or worse as outdoor air quality represent a real climate change danger to low-income Wisconsin households.

Conclusion #2: Avoiding the harms of climate change by improving their homes or by moving to better housing is generally not an option for low-income Wisconsin households. Low-income households face market barriers that prevent these households from investing in energy efficiency measures, even if those measures would generate a payback in the short- to mid-term. These market barriers involve certain housing-related characteristics of low-income households in Wisconsin; the physical characteristics of the housing units themselves; and, certain financial characteristics of the low-income households who occupy those units. In assessing these market barriers, I begin by identifying all 5-digit Zip Code Tabulation Areas ("ZCTAs").[11]

[11] ZCTAs are nearly, but not quite, identical to Zip Codes. ZCTAs are used by the U.S. Census Bureau, while Zip Codes are creatures of the U.S. Postal Service. According to the U.S. Census Bureau: "ZIP Code Tabulation Areas (ZCTAs) are generalized areal representations of United States Postal Service (USPS) ZIP Code service areas. The USPS ZIP Codes identify the individual post office or metropolitan area delivery station associated with mailing addresses. USPS ZIP Codes are not areal features but a collection of mail delivery routes. The term ZCTA was created to differentiate between this entity and true USPS ZIP Codes." For a generalized discussion of the differences between Zip Codes and ZCTA, *See* U.S. Census Bureau, *ZIP Code Tabulation Areas*, https://www.census.gov/programs-surveys/geography/guidance/geo-areas/zctas.html (last visited March 19, 2022).

Housing-related characteristics: The housing-related characteristics of low-income households in Wisconsin tend to make energy efficiency investments unavailable to said households without outside assistance. A review of those characteristics is thus relevant to a consideration of the structure and funding of Wisconsin's Focus program.

Without assistance through a program such as Focus, low-income households would be systematically excluded from being able to access energy efficiency as a mechanism to reduce home usage, thus controlling both energy bills and carbon emissions. Two illustrative "market barriers" related to the housing-related characteristics of low-income households in Wisconsin are the tenure and mobility of Wisconsin households.

Low-income households in Wisconsin tend to live in rental dwellings. This finding has two significant impacts on whether energy efficiency is accessible to low-income households without adoption of an appropriately funded and targeted program through Focus. First, tenants have little or no incentive to improve their landlord's property and receive little, if any, of the increased value of the property. Second, tenants do not generally have the authority to make decisions over improvements to major housing systems, whether it be a heating/cooling system or a hot water system. Indeed, even major appliances such as refrigerators are often owned (and thus controlled) by the property owner rather than by the tenant.

It is important to understand the relationship between tenure status and income for households living in Wisconsin. The "tenure" of households considers whether such households own or rent their homes. Renters, particularly low-income renters, run into the problem of "split incentives." The term "split incentives" refers to the situation where the cost of installing measures is borne by the owner of a housing unit while the benefit of reduced consumption (and thus reduced bills) is directed toward the resident (*i.e.*, the tenant). As a result, since the costs and benefits are borne by different stakeholders, no investment occurs.

Renter status can also present a legal problem as well. When a person is a tenant, the person does not have what is called the "dominion interest" over the major systems in a home that would generate substantial energy efficiency (and thus bill reductions). The "dominion interest" refers to the authority to make decisions. Even if the tenant had the desire to make energy efficiency investments, and the financial wherewithal to fund such investments, as a non-owner of the home, the tenant would not have the legal ability to upgrade major systems and appliances, (whether it be heating, hot water, refrigeration or something else).

Renter status unquestionably presents a market barrier to the installation of energy efficiency measures in Wisconsin, an impediment borne disproportionately by low-income households. As low-income households in Wisconsin are predominantly renters. If you are poor in Wisconsin, you are most likely a renter (65% of all households with income below $20,000 are renters).

The very fact that low-income households are disproportionately renters, presents market barriers that homeowners do not face when considering the accessibility of energy efficiency measures.

Mobility also impedes low-income tenant's ability to use energy efficiency to reduce home energy consumption. Census data shows that low-income households move almost twice as often as the total population. So even if a tenant had the legal authority to invest in an energy efficiency measure and the financial ability to do so, the payback period required to justify such an investment would need to match the household's tenure. A low-income household will not invest in a measure with a two-year payback, if that household intends to move in 12 months.

Data shows there is increased frequency of mobility within the low-income population in Wisconsin. This data can be used as a surrogate for households that do not have a sufficient length of residence to be able to justify energy efficiency investments. Few energy efficiency investments provide a one-year payback. Restricting investments exclusively to measures that would generate a one-year payback would miss the opportunity to pursue in the bulk of cost-effective usage reduction programs.

The mobility of households in Wisconsin can be measured by whether they lived in the same home at the same time the previous year ("12 months ago"). Table 3 shows that mobility is more prevalent in the low-income population. In 2019, while 21% of all persons with household income less than $10,000 had moved within the last year, and 16% of all persons with household income between $10,000 and $35,000 had, less than 9% of all households with income greater than $75,000 had moved relative to their residence one-year.[12]

[12] Table B07010, American Community Survey, 5-year data, 2019.

Table 3. Lived in Same House One-Year Ago (by income) (Wisconsin)	
	Percent of Population
Total: With income: $1 to $9,999 or loss	78.8%
Total: With income: $10,000 to $14,999	83.7%
Total: With income: $15,000 to $24,999	84.7%
Total: With income: $25,000 to $34,999	85.6%
Total: With income: $35,000 to $49,999	87.3%
Total: With income: $50,000 to $64,999	89.3%
Total: With income: $65,000 to $74,999	90.5%
Total: With income: $75,000 or more	91.4%

Low-income households are twice as likely to move in a given year than higher income households.

Financial-Related Characteristics of Low-Income Housing Units: High energy costs themselves create a barrier for low-income customers to implement energy efficiency measures to control those costs. As home energy prices increase as a percentage of income, low-income households have fewer available discretionary resources to invest in measures that could reduce their family expenditures. Rising home energy prices are a major factor in driving overall shelter prices upwards in Wisconsin. This impact is a particular problem for the lowest income households.

High home energy bills place additional stress on Wisconsin's low-income households' budgets. One common principle in reviewing basic family budgets is that total shelter costs should represent no more than 30% of a household's income. A household devoting more than 30 percent of its income toward shelter costs is considered over-extended. The affordability of housing under federal programs such as the Low-Income Housing Tax Credit and Home Investment Partnership Program (HOME) programs, for example, is determined by reference to the 30% burden figure. In addition, programs such as the Section 8 subsidized housing program, as well as public housing, are governed by the principle that total shelter costs should not exceed 30% of income. In assessing shelter burdens under the U.S. Department of Housing and Urban Development's Comprehensive Housing Affordability Strategy planning process, "excess" burdens are defined as those over 30% of income. Shelter costs include rent/mortgage payments plus all utilities (except telephone); internet service is not considered to be a utility.

The U.S. Census Bureau reports shelter burdens, disaggregated by rental burdens and homeowner burdens. In Wisconsin, 79% of all renters with income less than $20,000 a year have rent burdens exceeding 30% of income. Indeed, 70% of all renters with income less than $20,000 have rent burdens exceeding 40% of income. By the time annual incomes increase to $20,000 - $35,000, rent burdens drop dramatically (36% with burdens exceeding 40%), and drop even more substantially when annual incomes increase to between $35,000 and $50,000 (15% with burdens exceeding 40%).[13]

To the extent that shelter costs increase faster than income does, this situation will get worse. Total shelter costs include not only the housing costs (rent/mortgage), but home energy costs as well. In today's economy, a further degradation in the affordability of housing is expected.

High shelter burdens impede low-income energy efficiency investments in two ways. First, the high shelter costs, themselves, present an impediment to low-income households being able to invest in energy efficiency measures. If the household struggles to meet its day-to-day bills, it does not have the discretionary income to invest in energy savings measures, even if those measures are "cost-effective" over some reasonable period of time. In addition, as home energy takes up an increasing proportion of total shelter costs, there is less money "left" to pay for the housing component of total shelter costs. As a result, Wisconsin's low-income households are either forced into increasingly lower-priced (and presumably lower quality) housing, or those households face ongoing bill payment problems attributable to the mismatch between household resources and household expenses. In either case, the very housing cost characteristics that cause the need to improve energy efficiency in order to reduce bills is also the characteristic that makes it less likely that such investments in energy efficiency can occur.

This inability of low-income households to invest in energy efficiency should be of concern to energy stakeholders because it is the energy bills, themselves, that are contributing to the budget squeeze.

The Financial Characteristics of Wisconsin's Low-Income Households: If a household lacks the funds to invest in efficiency improvements, the cost-effectiveness of those investments in even the medium term becomes irrelevant. The fact that these households are *low-income* households is a factor which, unto itself, presents additional market barriers. The income status of many Wisconsin customers involves the inability of these households to afford even cost-effective energy efficiency improvements. As might be expected for households with annual incomes at or below $10,000 or $15,000,

[13] Table B25074, American Community Survey, 5-year data, 2019.

low-income households tend to have extremely low liquidity. The payback period for any particular energy efficiency measure becomes irrelevant if the household does not have the investment capital with which to begin.

The importance of this, for example, lies with appliance replacements. It is often cost-effective for a consumer to spend somewhat more money for a more energy-efficient new appliance. In such a purchase decision, if a less efficient refrigerator costs $600 and the more efficient refrigerator costs $800, it may well be cost-effective for the customer to pay the $200 difference to purchase the more efficient appliance. However, a reliance on such purchase decisions will exclude households that are not in the market to purchase a new refrigerator. It is unlikely that many low-income households have recently spent $600 for a new refrigerator.

In addition, low-income households tend to have very high implicit discount rates (also sometimes known as hurdle rates or internal rates of return). In a report for the Electric Power Research Institute, Cambridge Systematics found that the implicit discount rate for low-income households ranged up to the 80 - 90 percent level. This translates into a payback period of roughly one year. Requiring efficiency investments to be justified by a hurdle rate of 90-percent or more will almost entirely exclude low-income households from the energy efficiency market.

When I discuss "low-income" customers in Wisconsin, the incomes associated with these customers are quite low. Table 4 sets forth the percentage of households in the ZCTAs throughout Wisconsin by income level. Roughly one-in-ten (9.0%) customers in Wisconsin have an annual income less than $15,000, or roughly $1,250 per month. Nearly one-in-five households (18.0%) have an annual income of less than $25,000, while nearly one-in-four (22.5%) have an annual income of less than $30,000.[14]

[14] Table B19001, American Community Survey, 5-year data, 2019.

Table 4. Percent of Households by Annual Household Income (Table B19001, ACS, 5-year, 2019)		
Annual Household Income	Percent	Cumulative Percent
Total: Less than $10,000	4.7%	4.7%
Total: $10,000 to $14,999	4.3%	9.0%
Total: $15,000 to $19,999	4.4%	13.4%
Total: $20,000 to $24,999	4.6%	18.0%
Total: $25,000 to $29,999	4.5%	22.5%
Total: $30,000 to $34,999	4.8%	27.3%
Total: $35,000 to $39,999	4.5%	31.8%
Total: $40,000 to $44,999	4.6%	36.4%
Total: $45,000 to $49,999	4.2%	40.6%
Total: $50,000 to $59,999	8.0%	48.6%
Total: $60,000 to $74,999	10.8%	59.4%
Total: $75,000 to $99,999	14.2%	73.6%
Total: $100,000 to $124,999	9.8%	83.4%
Total: $125,000 to $149,999	6.0%	89.4%
Total: $150,000 to $199,999	5.7%	95.1%
Total: $200,000 or more	4.9%	100.0%
Total:	100.0%	

Conclusion #3: Mitigating the adverse health impacts of climate change by seeking access to health care is frequently not available to Wisconsin's low-income population. The data is set forth in Table 5 below. In Wisconsin, there is a direct relationship between low-income and the lack of health insurance. The percentage of Wisconsin's population living in households with income less than $50,000 in Wisconsin, and who lack health insurance entirely, is from two to three times higher than the percentage of the state's population who live in households with income greater than $75,000 and who lack health insurance. Moreover, of those who do *not* lack health insurance entirely, the percentage of Wisconsin's population who have insurance through a public program, rather than having private health insurance, sharply increases as income declines. While nearly 8-of-10 (77%) of the Wisconsin population having health insurance, with household income less than $25,000, have public insurance, that percentage declines to

36% for households with income between $50,000 and $75,000. By the time income reaches $100,000 or more, the percentage of Wisconsin's insured population taking insurance through a public program is only 13% (1-in-7).

The data suggests that in Wisconsin, as elsewhere, to the extent that low-income households experience adverse health impacts associated with climate change, they are less well prepared to respond to those health problems due to lack of income and ability to obtain health insurance because of that lack of income.

Table 5. Health Insurance Coverage by Income (Wisconsin) (ACS Table B27015, 5-Year data, 2019)

Income	Percent Lacking Health Insurance	Percent of those with Health Insurance Having Public Insurance
Less than $25,000	8.3%	76.8%
$25,000 - $49,999	8.8%	57.6%
$50,000 - $74,999	6.5%	36.2%
$75,000 - $99,999	4.1%	21.9%
$100,000 or more	2.6%	13.4%

Conclusion #4: Due to the very fact of their low-income status, Wisconsin's poor will frequently, if not generally, be "left behind" both by efficiency improvements and by electrification as a response to minimize climate change.

Data from the most recent (2015) Residential Energy Consumption Survey demonstrates how this occurs. The disproportionate lack of access to more efficient appliances, for example, is evident from the penetration of such appliances within the low-income community. The Residential Energy Consumption Survey does not have sufficiently large sample sizes to provide state-specific data. So I looked at data from the East North Central Census Division, which includes Wisconsin. The data on penetration rates of Energy Star appliances (or rather the *lack* of penetration) is set forth in Table 6 below. It shows that:

- While households with annual income below $40,000 represent 42% of the total population, those households represent only 31% of households with programmable thermostats for space heating; only 28% of households with Energy Star water heaters (of those households with water heaters); only 27% of households with Energy Star refrigerators; and only 30% of those with Energy Star freezers (of those households having freezers).

- In contrast, while households with annual income in excess of $100,000 represent 17% of the total population, those households represent 24% of households with programmable thermostats for space heating; 25% of households with Energy Star water heaters; 27% of households with Energy Star refrigerators; and 20% of households with Energy Star freezers (of those households with freezers).

As the East North Central Census Division moves to more efficient appliances, with a lower carbon footprint both indoors and outdoors, low-income households are being left behind.

Table 6. Energy Efficient Appliance Saturation by Income (East North Central) (2015 RECS)

Income	Total	Programmable Thermostat			Energy Star Water Heater			Energy Star Refrigerator			Energy Star Freezer		
		No	N/A	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Yes
Less than $20,000	16%	18%	38%	12%	16%	0%	9%	19%	61%	9%	10%	19%	10%
$20,000 - $39,999	26%	18%	32%	19%	28%	0%	19%	32%	32%	18%	23%	28%	20%
$40,000 - $59,999	15%	15%	19%	15%	15%	0%	18%	14%	14%	18%	19%	14%	13%
$60,000- $79,999	16%	16%	7%	18%	17%	0%	18%	17%	17%	18%	18%	15%	22%
$80,000 - $100,000	9%	8%	2%	11%	9%	0%	10%	8%	8%	10%	12%	8%	13%
$100,000 - $120,000	6%	4%	2%	8%	5%	0%	9%	4%	4%	9%	8%	5%	8%
$120,000 - $139,999	5%	4%	0%	6%	3%	0%	7%	2%	2%	7%	7%	3%	6%
$140,000 or more	6%	2%	0%	10%	6%	0%	9%	3%	3%	11%	4%	7%	6%

The Wisconsin PSC has made commendable efforts to address energy affordability in the State. In its Roadmap to Zero Carbon Investigation (Docket No. 5-EI-158), for example, the PSC directed Staff "to conduct a workshop on performance-based regulation, which should include a review of considerations related to affordability; . . .and to conduct further analysis on issues related to customer affordability." (Order, at 1, Docket No. 5-EI-158, September 23, 2021).

In that Order in its Roadmap to Zero Carbon investigation, the PSC found, inter alia, that:

> It is reasonable to consider energy efficiency issues raised in this docket as part of the Quadrennial Planning Process in docket 5-FE-104, including: (a) aligning Focus on Energy (Focus) performance goals and program offerings with decarbonization goals; (b) deploying electrification programs and offerings; [and] (c) deploying programs and offerings for low-income customers. . .

(September 23, 2021 Order, at 10). The Commission noted the "multiple recent affordability-related actions that provide reference points for further work on affordability-related considerations, including several related to managing customer costs associated with the transition to zero-carbon generation" it has taken with respect to affordability. (Id., at 11).

I commend the PSC for its multiple actions taken to address energy affordability in Wisconsin. Pursuant not only to the PSC's desire to consider low-income programs, as set forth in its Scoping Order in this Docket, but to the stated desire in its Roadmap investigation that "further analysis on customer affordability shall be conducted" (Id., at 13), the above analysis is provided to help demonstrate how the characteristics of low-income households, and the housing in which they live, implicate not only "affordability" issues, but implicate the inability of low-income households to participate in efforts to respond to climate change, and to participate in emission-reducing activities (both through efficiency investments and through investments in electrification), in the absence of outside help such as through the Focus program.

Recommendations on specific action steps to take to respond to these long-recognized needs in Wisconsin are offered below.

III. Implementation of an Objective Definition of "Equity" in Assessing "Equitable Distribution" of Efficiency Funding to Low-Income Households.

The Staff should be commended for identifying "equity" as an issue for this Quad IV investigation. Staff cited, for example, an American Council for an Energy Efficient Economy report noting the need to "leverage energy efficiency as a tool to mitigate and adapt to the impacts of climate change by advancing equity, enhancing resilience, and improving health outcomes." (Staff Memo, at 12). Staff identified what it referred to as "notable examples of how certain states are adjusting their energy efficiency programs to align with evolving and integrated policy expectations to achieve environmental, equity, and economic benefits." (Staff Memo, at 13 – 17). Staff explicitly noted that "Focus' overall energy savings goal was established to give the Program Administrator flexibility to adapt to changing market factors by allowing a small portion of the overall goal to be

met using any combination of kWh or therm savings while maintaining portfolio cost-effectiveness and equity in benefits between electric and gas customers as required by Wis. Stat. § 196.374." (Staff Memo, at 34). Staff held a workshop, with breakout groups which "focused their discussion on appropriate methods and strategies for using PBR [performance-based ratemaking] to support better performance outcomes for Wisconsin utilities on five separate areas [including] equity and affordability. . ." (Id., at 57). Staff discussed "two initiatives in Wisconsin focused on climate change and the clean energy transition that included recommendations for the role of customer equity and affordability (the WEDTI Initiative and the Governor's Climate Change Task Force Report.") (Id., at 80).

Most importantly, Staff concluded that "resource acquisition programs may systematically underserve income-qualified communities unless they are specifically designed with equity at the forefront. Income-qualified programs can remedy this by prioritizing the unique needs and barriers of income-qualified customers." (Staff Memo, at 97). Staff concluded, however, that "while resource acquisition and equity-focused programs can coexist, there is tension requiring clear strategic direction and intentional program design." (Id.).

This section provides recommendations to achieve that "clear strategic direction and intentional program design" appropriately identified by the Staff Memo as being needed.

A. "Equity" has Multiple Different Aspects to It.

The first step in providing "clear strategic direction" is to identify the multiple aspects in the concept of "equity." "Equity" is a word that, not surprisingly, has received substantial attention in both academic literature and the law.[15] Please see Appendix D for a lengthy discussion on this subject.

Assessing the "equity" of distributing Focus dollars should focus primarily on "vertical equity" and measuring outcomes (known in the literature on equity as "equity plus"). "Vertical equity" stands in contrast to "horizontal equity." Horizontal equity involves treating equals the same. Vertical equity involves treating those that are unequal differently. Low-income energy efficiency investments provided through Wisconsin's

[15] A detailed discussion of the legal and pedagogical grounds for defining "equity," and how to apply those definitions of equity to the distribution of utility energy efficiency investments, was presented in the Chapter I authored for the book *Energy Justice: US and International Perspectives* (Salter, Gonzalez and Warner, ed.), Edward Elgar Publishing, 2018, London, England. My chapter was titled "The equities of efficiency: distributing energy usage reduction dollars." This statement will not endeavor to duplicate that entire detailed discussion of how to objectively define and measure "equity."

Focus program should be explicitly grounded in concepts of vertical equity and equity plus.

Horizontal Equity: Because most energy advocates have not studied the shortcomings of horizontal equity doctrine, the principles of horizontal equity are often advanced within the context of utility funding of usage reduction programs. Funding allocations are based on the percentage of sales by customer class, or based on a percentage of revenue derived from each class. Arguments based on such proportionate distribution of energy efficiency dollars are (whether recognized or not) grounded in horizontal equity principles. For example:

- The National Consumer Law Center argued that "assisted multifamily housing should receive its fair share of the total amount of utility-generated efficiency funding each year." While not explicitly using the horizontal equity nomenclature, National Consumer Law Center nonetheless reasoned in horizontal equity terms. It argued that "just under 40% of end-use electricity sales are to residential customers, and . . . 25% of families live in multifamily housing, so that as much as 10% of electric companies' energy efficiency expenditures should be for multifamily housing."[16]

- Similarly, the American Council for an Energy Efficient Economy ("ACEEE") has argued in horizontal equity terms as well. ACEEE compared the "spending as a share of total spending on residential programs . . . to the percentage of households living in multifamily buildings."[17] ACEEE argued that "[m]ultifamily program spending as [a] share of all residential program spending met or surpassed the multifamily share of the housing market in Boston, Indianapolis, and Riverside only. In all of the remaining metropolitan areas, the share of residential spending on targeted multifamily programs was less than the multifamily share of households; indicating room to expand these programs to better reach the multifamily sector." This is a horizontal equity argument, reasoning that each housing sector should receive a comparable share.

To summarize, the principle of horizontal equity means that equals are treated equally. In the energy usage reduction arena, for example, horizontal equity results in an assertion that if multi-family housing represents x% of all housing units, it should receive x% of all residential energy efficiency funding. Because of the questionable assumptions about who constitutes "equals" under horizontal equity doctrine, vertical equity principles are

[16] Harak, Charlie (2010). Up The Chimney: How HUD's Inaction Costs Taypayers Millions and Drives Up Utility Bills for Low-Income Families, at 19, 20, National Consumer Law Center: Boston (MA).

[17] Kate Johnson and Eric Mackres (March 2013).Scaling Up Multifamily Energy Efficiency Programs: A Metropolitan Area Assessment, at 17, American Council for an Energy Efficient Economy: Washington D.C.

more commonly and appropriately used to determine the equity of funding distribution in non-energy arenas. These vertical equity principles should be applied to energy efficiency equity discussions as well.

Vertical Equity: In contrast to horizontal equity, "vertical equity" requires that the distribution of assistance be explicitly varied to reflect differences in needs. Unlike "horizontal equity," which provides that everyone be treated equally, vertical equity provides that persons with greater needs should receive greater resources. A vertical equity regime recognizes that "equity" often requires different levels of treatment to achieve equal outputs.

"Vertical equity" recognizes that certain factors relating to the characteristics of the recipient of aid require additional resources to address. For example, just as a component of the equity framework in school finances must accept that some unequal students should have access to unequal levels of resources, an equity framework in utility energy efficiency programming must also accept that some ratepayers with greater needs, should have access to unequal levels of resources. Without those additional resources, investments in low-income energy efficiency cannot and will not occur.

There is a very practical application of these concepts to the consideration of low-income funding through the Focus program. Given that it is more expensive to serve low-income customers, to provide an equal per-customer investment to low-income and non-low-income customers in setting budgets will result either in: (1) disproportionately fewer low-income customers being served given that per-customer costs are higher for the low-income population; or (2) low-income customers being under-served by having fewer cost-effective measures installed in each customer's home in order to keep the cost per-customer lower in order to serve a larger number of customers.

The PSC should explicitly adopt the principle that equity in efficiency (and electrification) funding distribution will be assessed in terms of vertical equity in the Focus program.

Equity-Plus: Increasingly today, the definition and application of objective measurements of "equity" incorporates an examination of the relationship between "inputs" and "outcomes." Overlaid on top of the traditional measures of education equity, for example, is a consideration not only of the equity of per-pupil expenditures, but also the equity of educational results (such as high school graduation rates). According to one analysis, the "central purpose" of an equity analysis is to:

> calculate the extent to which state systems ensure equality of educational opportunity for all children, regardless of background, family income, where they live, or where they attend school. . .[E]qual educational opportunity means that all children (and the public schools that serve them) have access to those resources, inputs, and services necessary to provide the "opportunity to learn"—that is, the opportunity to achieve established outcome goals.[18]

This equity formulation mirrors the concern of others.

> Inequity among districts means that children in lower-funded districts do not have access to the same resources . . . [as] do their peers in districts with higher levels of funding. Furthermore, low-income children and English language learners need extra resources to overcome disadvantages due to socioeconomic status or lack of English proficiency. In many cases, not only are these children not receiving equal resources but they are not receiving the extra support they need in order to succeed.[19]

These formulations of "equity" focus on the educational result sought. The first commentator quickly overlays an outcome constraint ("necessary to ***achieve established outcome goals***") on the equity analysis. The second commentator speaks the language of vertical equity ("need extra resources to overcome disadvantages") but then also overlays an outcome consideration ("supports they need ***in order to succeed***").

By focusing on outcomes, the equity-plus standard keeps the focus of the equity assessment on the ***recipient*** of resources rather than on the ***provider*** of resources.[20] The equity-plus standard moves beyond an analytic focus on whether equitable dollars are being expended, a focus that is implicit within each of the horizontal and vertical equity principles. It focuses instead on what is accomplished by the person on whose behalf those resources are expended.

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[18] Bruce Baker (June 2012); Is School Funding Fair? A National Report Card (2d ed.), 5, Education Law Center, Rutgers University Graduate School of Education; Bruce Baker (January 2014). Is School Funding Fair? A National Report Card (3rd ed.), 5, Education law Center, Rutgers University Graduate School of Education.

[19] Diana Epstein, Center for American Progress, Measuring Inequities in School Funding 7 (Aug. 2011).

[20] Julie Underwood, School Finance Adequacy as Vertical Equity, 28 U. Mich. J.L. Reform 493, 493, 495-496, 511-517 (1995).

The PSC should use a combination of the Vertical Equity and Equity-Plus approaches in reviewing the development of low-income programs within Focus. The outcomes the PSC should consider include not merely generating a proportionate share of energy savings for low-income households, but also generating a proportionate share of emission reductions from low-income households. Moreover, if the program requires additional resources to be devoted to low-income households due to their special needs, those resources would be provided in order to generate proportionate outcomes.

B. "Equity" Should Take Affordability Into Account.

Sierra Club issued a report, *Energy Burden in Milwaukee: Study Reveals Major Disparities & Links to Redlined Areas,* hereafter referred to as *Milwaukee Burdens* and attached as Appendix C, that analyzed home energy burdens in the City of Milwaukee. This report plus additional analysis by me supports the need for "equity" to take affordability into account and provides additional support for the Staff recommendation for a "community outreach" pilot program.

Milwaukee Burdens explains that "energy burdens" represent bills as a percentage of income. A household with an energy bill of $2,000 and an annual income of $20,000, for example, experiences an energy burden of 10% of income. Energy burdens that equal or exceed 6% of income are considered to be high energy burdens.

High energy burdens harm households in numerous ways. According to *Milwaukee Burdens*, high energy burdens not only threaten access to life sustaining home energy through nonpayment disconnections, but high burdens force "tough choices between paying energy bills and buying food, covering rent or mortgage payments, obtaining medical treatment and medicine, and accessing other life essentials." According to *Milwaukee Burdens*, "households with high energy burdens experience many negative long-term effects on health and well-being including a greater risk for respiratory diseases and increased stress."

High energy burdens in Milwaukee are not racially neutral. *Milwaukee Burdens* reports that 85,000 people, or roughly 6% of the Milwaukee metro population, live in high-energy-burden census tracts.

> However, areas with high energy burdens are disproportionately Black and Hispanic/Latinx communities. While 16% of Milwaukee's metro population is Black, 65% of residents of high-burden neighborhoods are Black. 11% of the metro area population is Hispanic or Latinx, but 21% of the population in high-burden neighborhoods is Hispanic/Latinx.

In contrast, *Milwaukee Burdens* reports that "while the Milwaukee metro area's white population is two-thirds of the total population, white residents only account for 9% of the population in high-burden neighborhoods.

The median energy burden for Milwaukee's Black and Hispanic/Latinx population is more than two times higher than Milwaukee's White population. While the median energy burden for Milwaukee's Black population is 5.0%, and for the city's Hispanic/Latinx population is 5.3%, the median energy burden for Milwaukee's White population is only 2.1%.

Finally, the *Milwaukee Burdens* study reports that while energy efficiency investments in the home, including improved efficiency of appliances and lighting, would help reduce high burdens, the very factors which contribute to the problem of high burdens also impede the use of efficiency investments to help respond to the problem. According to the study, "energy efficiency improvements to alleviate the cost burdens are largely inaccessible to low-income families, and awareness of programs is often low." The *Milwaukee Burdens* report concluded that more must be done:

> Increasing investments in energy efficiency and affordability programs and targeting these initiatives to the communities that experience high energy burdens as laid out in this report is an important and necessary way to address the clear disparities. These programs can help reduce high energy burdens, make energy bills more affordable, and improve health disparities worsened by COVID-19.

The Staff Memo discusses the importance of addressing home energy affordability. The Staff noted that a Workgroup on performance-based ratemaking ("PBR") addressed affordability issues in this docket (January 2022) (Staff Memo, at 57 – 58). According to the Staff Memo, that Workgroup "noted that energy efficiency efforts can achieve multiple objectives and PBR should consider separate categories of metrics for low-income initiatives. The Staff and Workgroup should be commended for recognizing this need and should be supported for pursuing these efforts. The PSC should also consider the racial inequities that the Sierra Club identified with respect to home energy unaffordability in Milwaukee. The "separate categories of metrics" recommended should incorporate elements of environmental justice and racial equity. Moreover, as discussed in more detail below, one element of responding to the Workgroup recommendations noted in the Staff Memo is approval of the targeted community-based Focus program. (Alternative #3 in the Staff's Report).

A Wisconsin Community-Based Targeting Pilot can be modeled on the Consumers Energy pilot program adopted as part of a settlement of a "Energy Waste Reduction" ("EWR") plan proceeding, which was approved on March 17, 2022 by the Michigan Public Service Commission, attached hereto.

In that Consumers Settlement, the parties agreed in relevant part as follows:

> Geographic Targeting. The parties agree that in 2022 Consumers Energy will initiate the research studies identified below to support development of an income-qualified geo-targeting protocol.
>
> a. A low income needs assessment ("LINA") study to identify historic participation and coverage of the Company's income qualified programs, characterize low-income areas using available datasets, and develop scenarios for ranking geographies based on high need criteria or for optimizing specific benefits to inform future prioritization of services. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate. . .
>
> The parties agree that Consumers Energy will initiate a follow-up research effort utilizing the LINA research to develop a protocol and implementation strategy for future geographic targeting initiatives designed to increase vulnerable and/or underserved low income customers' participation in income qualified single and multi-family programs through geographically and programmatically targeted approaches, ensure availability and promotion of air sealing and insulation measures by partner agencies and contractors, and increase trade ally awareness regarding the identification of health and safety deferrals. The Company agrees to incorporate the targeting protocol in the development of its next EWR Plan filing.

In addition to this "LINA" effort, the March 2022 Consumers Energy settlement provided that:

> Income Qualified Flint Initiative. The Company agrees to invest $1 million between 2023 and 2024 to support an Income Qualified program targeted initiative in and around Flint to identify and assess the impact of a geographically targeted approach to the delivery of EWR services. The

initiative aims to find and provide EWR intervention to economically vulnerable customers including those in arrears (which can include CARE, HHC, and SER recipients), struggling to pay utility bills, and at risk of deferral due to health and safety concerns. The initiative will focus on expanding existing efforts with community agencies, energy assistance coordination, outreach to income-qualified participants who recently installed emergency equipment, education and awareness efforts, trade ally education and engagement, and other targeted approaches.

A. Consumers Energy can use this $1 million in any of the following zip codes in Flint: 48502, 48503, 48504, 48505, 48506, and 48507; however, Consumers Energy will prioritize outreach to zip code 48505, followed by 48503 and then 48502, and finally by 48507, 40504, and 48506.[21]

The community-based targeting pilot recommended for Wisconsin above has precedent in Michigan. Wisconsin's Focus program would be well-served to model such a pilot on the Consumers Energy effort.

C. "Equity" Should Consider the Added Utility-Related Benefits Flowing from Low-Income Efficiency Investments.

The delivery of appropriately designed, targeted and funded bill reductions through investments in low-income energy efficiency measures not only yield social benefits to the participating customer, and climate benefits to the State of Wisconsin, but also deliver a broad range of improvement in a utility's ability-to-collect. Accordingly, in addition to being investments in measures to combat climate change, low-income energy efficiency investments can and should be pursued as an important business tool in controlling system-wide utility costs that would otherwise ultimately flow to customers in rates. Cost reductions commonly associated with low-income energy efficiency investments include savings such as reduced bad debt, reduced working capital, reduced credit and collection expenses, and other savings.

The relationship that exists between low-income status and bill payment difficulties has been established in numerous studies. The Energy Information Administration of the U.S. Department of Energy ("EIA/DOE") convincingly established the relationship

[21] Michigan Public Service Commission, In the Matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for Consumers Energy Company to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016, Case No. U-20875, Order Approving Settlement Agreement, March 17, 2022).

between income and "energy insecurity" in nationwide data from its Residential Energy Consumption Survey ("RECS") in 2015.[22] The data is presented in Table 7 immediately below.

Table 7. Household Energy Insecurity, 2015
EIA/DOE Residential Energy Consumption Survey (RECS)[23]

2015 annual household income	Any household energy insecurity	Reducing or forgoing food or medicine to pay energy costs	Leaving home at unhealthy temperature	Receiving disconnect or delivery stop notice	Unable to use heating equipment	Unable to use cooling equipment
Less than $20,000	49.8%	38.4%	20.1%	23.1%	10.5%	10.0%
$20,000 to $39,999	40.3%	29.3%	13.9%	19.8%	7.0%	8.1%
$40,000 to $59,999	34.2%	22.8%	10.3%	15.8%	5.4%	5.4%
$60,000 to $79,999	25.7%	14.5%	7.2%	11.8%	3.3%	5.3%
$80,000 to $99,999	18.6%	8.2%	4.1%	8.2%	1.0%	2.1%
$100,000 to $119,999	12.3%	7.4%	3.7%	4.9%	1.2%	1.2%
$120,000 to $139,999	13.0%	7.4%	5.6%	5.6%	N/A	N/A
$140,000 or more	8.0%	2.7%	2.7%	3.6%	0.9%	1.8%

The data shows that as household income increases, home energy insecurity decreases. The Figure below also shows the relationship between "any household insecurity" in general and the receipt of a notice of disconnection (applicable to public utilities) or stop delivery notice (applicable to deliverable fuels such as fuel oil). While 23.1% of households with income less than $20,000 had received a disconnect/stop delivery notice, only 15.8% with income between $40,000 and $59,999 had. When income increased to between $80,000 and $99,999, the percentage decreased further to 8.2%.

The 2015 results were not unique to that year, nor surprising given similar examinations of earlier RECS data. In 2005, the federal agency administering the Low-Income Home Energy Assistance Program ("LIHEAP") funded a one-time special set of questions through the 2005 RECS. A resulting review of the 2005 data was undertaken for the

[22] Data from the 2019 RECS has not yet been publicly released. The 2015 data is the most recent data available. https://www.eia.gov/consumption/residential/data/2015/index.php (last accessed March 2, 2022).

[23] https://www.eia.gov/consumption/residential/data/2015/hc/php/hc11.1.php (last accessed March 2, 2022).

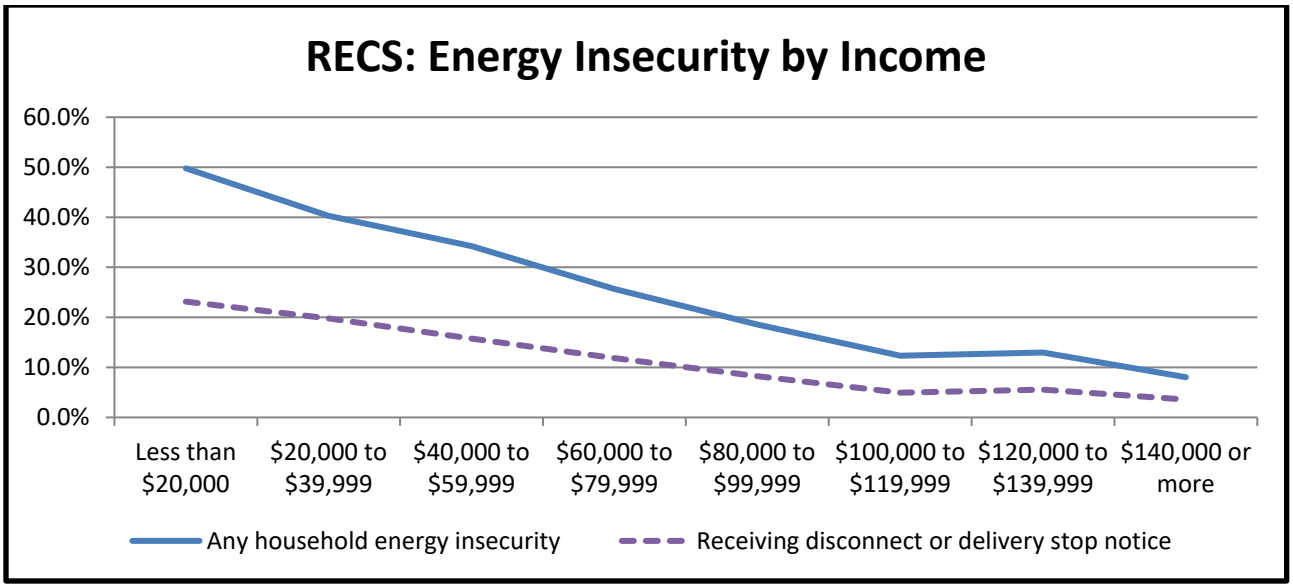
federal LIHEAP office.[24] The LIHEAP study reported that households with income below the Federal Poverty Level had higher rates of Energy Insecurity than did other households (*e.g.*, households with income at 100% to 150% of Poverty; households with income above 150% of Poverty). Poverty Level rather than income is associated with all types of energy insecurity, concluding that it is important to consider household size.[25] Higher residential energy burdens, but not higher home energy burdens,[26] are associated with all types of energy insecurity, the study found, including both service interruptions and "financial energy insecurity."[27]

[24] APPRISE, Inc. (Feb. 2010). LIHEAP Special Study of the 2005 Residential Energy Consumption Survey, Dimensions of Energy Insecurity for Low-Income Households, Final Report, prepared for U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance, http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (last accessed March 2, 2022).

[25] Poverty Level is income taking into account household size. In 2022, for example, 100% of Poverty for a 1-person household is $13,590, while 100% of Poverty for a 2-person household is $18,310, and for a 3-person household is $23,030. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines (last accessed March 2, 2022).

[26] Pursuant to the federal LIHEAP statute, "home energy" is a defined term. By statute, "home energy" is limited to home heating and cooling used in a residential dwelling. https://www.acf.hhs.gov/ocs/fact-sheet/liheap-fact-sheet (last accessed March 2, 2022). See also, 42 U.S.C. 8621(6). In contrast, "residential energy" includes energy used for home heating and cooling, water heating, and appliances. *See* Dimensions of Energy Insecurity, supra, at 32 (contrasting "home energy" and "residential energy").

[27] ". . .in 2005, households with high residential energy burden were much more likely to have a heat interruption than households with moderate or low burdens. However, it appears that there is very little relationship between home energy burden and heat interruptions. One reason that high residential energy burden is better associated with heat interruptions compared to home energy burden may be the fact that if the household cannot pay its whole energy bill, it will be without heat regardless of what portion of the energy bill was for space heating. . . [The data] focuses on the constraints households face on household necessities or whether they received shutoff notices or threats. The [data] shows that both types of financial Energy Insecurity appear to be related to residential energy burden, but - not related to the level of home energy burden." (Dimensions of Energy Insecurity, supra, at 33, 34).



This DOE data is confirmed by more recent data from the National Energy Assistance Directors Association (NEADA). NEADA periodically conducts a Congressionally-funded survey of low-income households who receive benefits through the federal fuel assistance program (called LIHEAP). The most recent NEADA survey, which was published in December 2018,[28] found three results that are important from the perspective of how inability-to-pay and targeted low-income energy efficiency fit together.

- First, not only do a significant number of low-income households skip paying or pay less than their full home energy bill due to not having enough money for their energy bill, but the percentage reporting taking such actions increases as incomes decline. Table 8 presents data which shows that one-in-nine LIHEAP recipients either skipped paying their home energy bills every month, or paid less than their full bill, because they did not have enough money to pay their bill. Nearly three times as many LIHEAP recipients with income less than 50% of Poverty, and 1.5 times as many recipients with income between 51 and 100% of Poverty, did so than did LIHEAP recipients with income greater than 150% of Poverty. Fewer than half of LIHEAP recipients said that they "never" skipped paying a bill, or paid less than their full bill. While three-in-five (57%) recipients with income greater than 150% of Poverty reported never missing a payment, or paying less than their full payment, only two-in-five (40%) recipients with income below 50% of Poverty reported never skipping a payment.

[28] NEADA (December 2018). 2018 National Energy Assistance Survey, Final Report, available at http://www.appriseinc.org/resource-library/selected-reports/energy-survey-research-and-policy-analysis/ (last accessed March 6, 2022).

Table 8. Skipped Paying or Paid Less than Entire Home Energy Bill Due to Not having Enough Money for the Energy Bill During the Past Year 2018 NEA Survey Final Report (at 24 – 25)					
	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Almost every month	11%	17%	9%	11%	6%
Some Months	21%	34%	17%	20%	15%
1 or 2 Months	17%	8%	24%	12%	20%
Never / No	49%	40%	47%	56%	57%
Don't Know/Refused	2%	2%	3%	1%	2%

- Second, one impact of skipping payments, or making less than full payments, is that LIHEAP recipients also report having received shutoff notices. The data is set forth in Table 9 below. Fewer than half reported having "never" received a shutoff notice, while nearly one-third report having received a shutoff notice either "almost every month" (11%) or "some months" (21%). Again, there is a noticeable difference between households at the lowest income levels and households at the highest income level. While more than one-quarter (27%) of LIHEAP recipients with income less than 50% of Poverty report having received a disconnect notice either "almost every month" (10%) or "some months" (17%), only 4% of households with income greater less than 150% of Poverty reported receiving disconnect notices that frequently (0% almost every month; 4% some months). More than four-fifths (84%) of LIHEAP recipients with income greater than 150% of Poverty report never having received a shutoff notice, while only one-half (50%) of LIHEAP recipients with income less than 50% of Poverty did.

Table 9. Received Notice or Threat to Disconnect or Discontinue Electricity or Home Heating Fuel Due to Not Having Enough Money for the Energy Bill During the Past Year 2018 NEA Survey Final Report (at 26 – 27)					
	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Almost every month	4%	10%	3%	4%	0%
Some Months	13%	17%	15%	9%	4%
1 or 2 Months	17%	20%	18%	15%	12%
Never / No	64%	50%	62%	70%	84%
Don't Know/Refused	2%	4%	2%	2%	0%

- Finally, the NEADA survey of LIHEAP recipients reports that nearly one-in-six (15%) recipients experienced either an electricity shutoff or a natural gas shutoff due to nonpayment during the past year. When utility fuels are examined individually, the NEADA data shows that 13% of all LIHEAP recipients had their electricity disconnected for nonpayment, and 7% of LIHEAP recipients had their natural gas service disconnected for nonpayment. The data is presented in Table 10 below. The lowest income recipients had service disconnected far more frequently than did higher income recipients: five times more frequently for electricity (24% vs. 5%), and nearly six times more frequently for natural gas (12% vs. 2%).

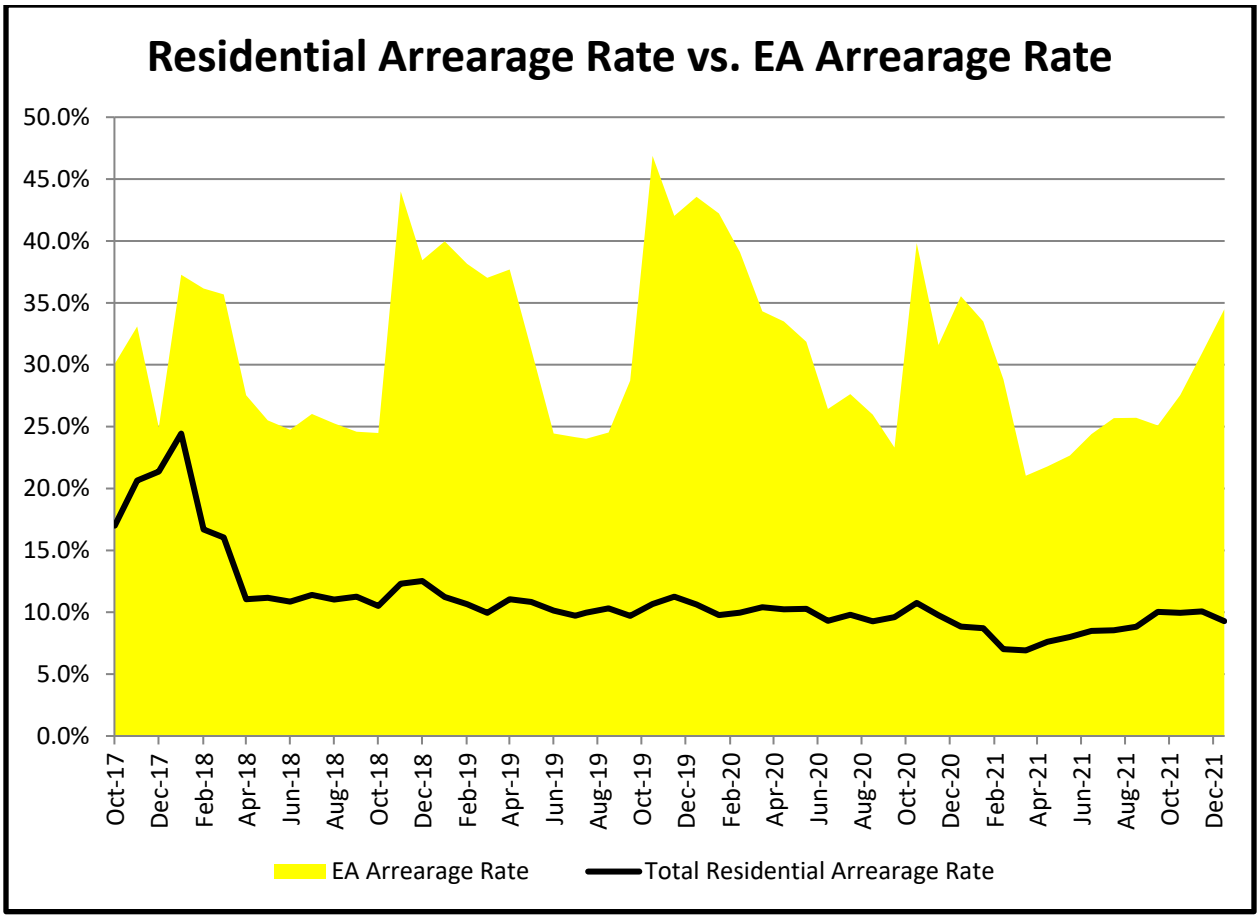
Table 10. Utility Service Was Shut Off Due to Nonpayment During the Past Year 2018 NEA Survey Final Report (at 27 – 28)					
	Total	Poverty Level			
		0 - 50%	51 – 100%	101 – 150%	>150%
Electricity	13%	24%	12%	9%	5%
Gas	7%	12%	6%	8%	2%
Electricity or Gas	15%	26%	14%	13%	7%

Based on this data and discussion, two conclusions have been convincingly established. First, substantial numbers of low-income households either skip payments or pay less than their full utility bill in any given month because they lack the household resources to make such payments. In addition, as a result of these actions, utilities respond by engaging in collection activity that frequently leads to the threatened or actual disconnection of service. The failure to pay, and the utility collection activity which

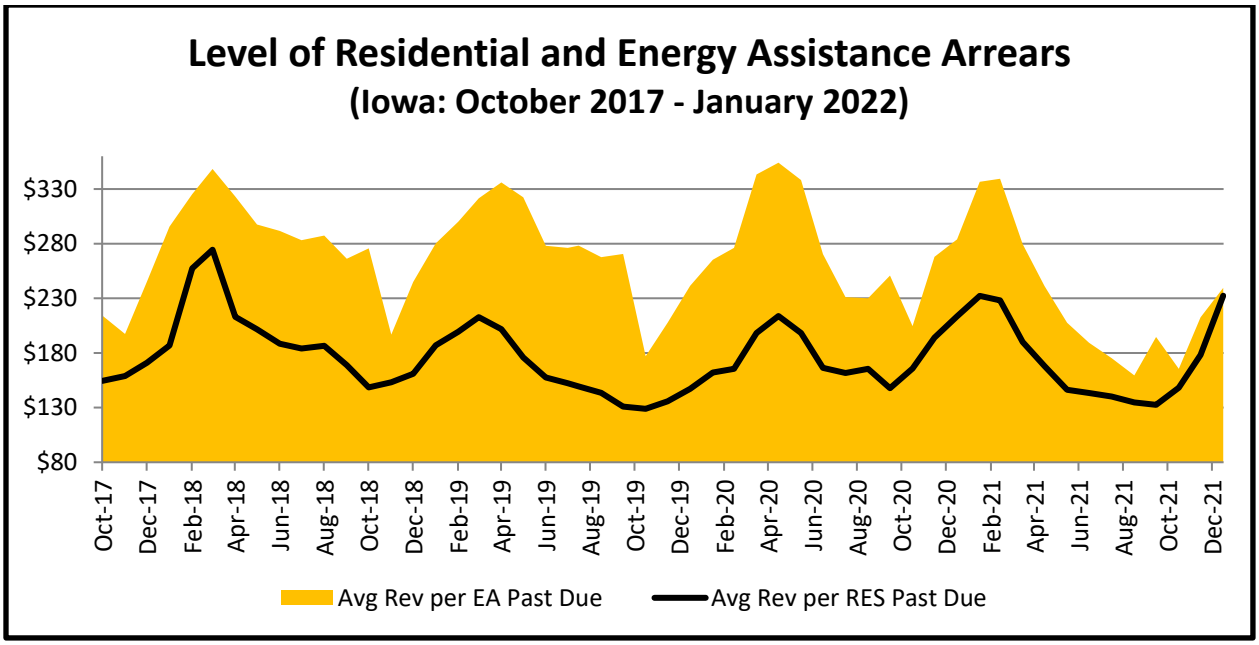
results from that failure to pay, is clearly related to low-income status. While problems are more prevalent in the lowest income tier of poverty (0 – 50%), there is a bright line of distinction between those households with income at or below 150 - 200% of Poverty and those households with income exceeding 200% of Poverty.

The national information presented above is uniformly consistent with data that has been generated for natural gas and electric utilities in other states. Not only each study unto itself, but the group of studies taken as a whole, demonstrates that low-income customers suffer from a greater inability-to-pay than residential customers generally. This data demonstrates further that it is probable that offering usage reduction programs will address not only the inability-to-pay problems of the individual customers, but also the business problems arising from the payment troubles.

Perhaps most comparable to Wisconsin is data from Iowa. The Iowa Utilities Board tracks the arrearages of Energy Assistance (EA) recipients and residential customers. The Figure below shows the percentage of revenue in arrears by month since October 2017. This data range shows two complete winter heating seasons prior to COVID-19 through the most recent month available. The data shows that the percentage of low-income accounts in arrears in Iowa was generally 2.5 times higher than the percentage of residential accounts in arrears, with seasonal variation pushing the rate up to more than four times higher.



Not only is a higher percentage of Iowa's low-income accounts in arrears, but those accounts that are in arrears are deeper in arrears. Even with the seasonal variation of the level of arrears for both residential and low-income accounts, low-income customers have average unpaid balances of well over $100 more than the unpaid balances of residential customers as a whole.



Directing energy efficiency investments toward low-income customers, particularly those low-income households in payment trouble, not only will have the effect of improving the affordability of service to these households, but will reduce utility costs as well.

The delivery of energy efficiency investments to low-income customers not only yields resource conservation and avoided cost benefits to the affected utility, but delivers a broad range of other utility cost reductions as well. Accordingly, low-income energy efficiency programs should be implemented not only as a resource efficiency measure, or a climate change response, but also as an important tool in controlling other system-wide utility costs. Avoided costs commonly associated with low-income energy efficiency would include savings such as reduced arrears, reduced working capital, reduced credit and collection expenses, and the like.[29]

The existence of direct financial benefits to utilities arising from energy efficiency programs targeted specifically to low-income households has been recognized for more than 35 years. The presence of such avoided costs was first postulated in 1987. That analysis stated that targeted electric energy efficiency programs had advantages that went beyond the traditional energy and capacity savings associated with energy efficiency measures:

[29] In this fashion, low-income energy efficiency programs are closely akin to low-income rate affordability programs in their ability not only to serve the social function of addressing energy unaffordability problems, but also in serving the business purpose of reducing the business costs associated with an inability-to-pay.

> The cost-effective reduction of system costs is relevant and important in every part of the business operations of the utility, not simply to the power supply function. Accordingly, a utility should be concerned with the problem of nonpayment, overdue payment, and partial payment of utility bills. Bad debt arises when ratepayers demand power from the system and then do not pay for it on a timely basis. . . .[A] new conservation program [can be proposed] that is justified on an avoided cost basis. The proposal rejects the historical view that avoided costs include only an energy and a capacity component. Instead, it introduces the notion of avoided bad debt. As long as the energy efficiency program costs less than the bad debt it will avoid, the program is cost-justified.[30]

In this 1987 article, "bad debt" was defined to include all aspects of costs associated with payment troubles. The term was used to include not only written-off accounts, but credit and collection expenses, working capital expenses, and a host of other expenses related to nonpayment. Since that time, the existence and importance of such expanded avoided costs has become generally-accepted. Analysts have repeatedly confirmed that low-income energy efficiency generates benefits beyond simply energy and capacity savings.

My discussion here is not intended to be an exhaustive list of how energy efficiency investments targeted to low-income customers, all else equal, might reduce costs to the utility. This list, instead, is intended to be illustrative. For example, if a low-income customer has an arrearage, the total "asked to pay" amount includes the unpaid arrears ***plus*** the bill for current service. To the extent that energy efficiency investments reduce the bill for current service, more of the total payment by the customer will be available to apply to the retirement of arrears. By reducing the level of arrears, not only does a utility reduce its working capital requirement, it reduces its risk of bad debt (in the event that some portion of the arrears ultimately goes unpaid).

Considering the impacts of low-income efficiency on working capital is of particular importance. Working capital expense is driven by two factors: (1) the ***level*** of arrears; and (2) the ***age*** of arrears. An arrearage of $1,500 generates a greater working capital expense than an arrearage of $500 all else equal and an arrearage that is 120 days old generates a greater working capital expense than an arrearage that is 60 days old all else equal. Accordingly, working capital reductions are important to consider from a low-income energy efficiency perspective for several reasons.

[30] Colton and Sheehan (1987). "A New Basis for Conservation Programs for the Poor: Expanding the Concept of Avoided Costs," 21 *Clearinghouse Review* 135, 139.

- First, working capital reductions arise even if there is merely a reduction in the level of arrears. Arrearages do not have to be eliminated entirely. If a low-income customer carries an arrearage of $100 rather than $300, there is a working capital reduction.

- Second, working capital reductions occur if bill payment is merely accelerated, even if the ultimate amount of payment is the same. If a low-income customer carries an arrearage for one month rather than three months, even if at the end of three months the bill is completely paid either way, there has been a working capital reduction.

- Third, since working capital is a capital item, the inclusion of working capital carries an equity return with it. The impact of reducing either the dollar level of arrears (i.e, increasing the completeness of payment) or the number of days before a bill is paid (*i.e.*, increasing the timeliness of payment), is more than the expense reduction itself. There is a return associated with it as well.

- Fourth, given the fact that there is a return associated with working capital, there will be a tax impact associated with the equity portion of the return. Every dollar reduction in working capital, in other words, generates more than dollar reduction in rates. To the extent that an appropriately designed, targeted and funded low-income program has the impact of reducing the number of low-income customers in arrears, the dollars of arrears which low-income customers carry, or the length of time that arrearages remain outstanding, there is a working capital reduction that redounds to the benefit of ratepayers in numerous ways.

Each of the impacts identified above–again the discussion of which is intended to be illustrative and not exhaustive–represents a financial benefit arising from an appropriately designed, targeted and funded low-income energy efficiency program. Given the extent of these potential expense reductions, the benefits of the low-income program create an independent justification for the below recommendations regarding the design, implementation and funding of low-income efficiency investments.

IV. Form of Low-Income Energy Efficiency Investments.

The Staff Memo provides an excellent basis for scoping a direction for investments in low-income energy efficiency for the next four years and I provide additional support for a number of these recommendations and include a few others for consideration:

- The Staff Alternative #3 regarding developing a "community-based pilot in one or more targeted communities" is commendable and Sierra Club enthusiastically supports this recommendation and I provide additional information to support it.

- The Staff Alternative #1 recommends maintaining the fundamental definition of "low-income" as 60% of State Median Income. Sierra Club supports this recommendation and I provide additional information to support it.

- The Staff Alternative #4, which recommends maintaining programs, not as the primary focus of low-income investments, but as a supplemental income-qualified initiative, for households with income greater than 60% of SMI but less than 80% of SMI, as recommended in Staff Alternative #4. Sierra Club supports this recommendation and I provide additional information to support it.

Sierra Club supports Staff Sub-Alternative A and the discussion below of "meaningful public participation" provides additional support for moving forward with Staff Sub-Alternative A. Sierra Club also supports Staff Sub-Alternative B and the discussion below regarding Key Performance Indicators ("KPIs") provides additional support for the Commission to adopt this recommendation.

Within the context of this general agreement with the Staff's recommended Alternatives, the discussion below offers the following recommendations:

Recommendation #1: Low-income measures should be 100% subsidized / direct-installed measures.

The detailed data presented above demonstrates the need for 100% subsidized / direct-installed measures for low-income households. The data supports the conclusion that low-income customers do not have the capacity, and often do not have the authority, to make investments that require out-of-pocket expenditures or resources. Programs that are based exclusively, or primarily, on the effectiveness of "consumer education" or "consumer incentives" are likely to be an ineffective mechanism by which to reach low-income households.

This recommendation bolsters, and does not stand in contravention to, the Staff's proposed Alternatives. Indeed, as mentioned in this section, Staff alternatives #1, #3, and #4, along with Staff Sub-Alternatives A and B, merit approval. This recommendation lends further weight to those Staff Alternatives.

Recommendation #2: Deep savings (including electric savings) should be the objective.

The detailed data presented above supports several conclusions that lead to this recommendation. The data supports the conclusion that energy efficiency measures, generally, will not be within the capacity of low-income households to adopt without external assistance. This inability extends not merely to space heating (furnaces, air-sealing, insulation) but to electric appliances as well. The data supports the conclusion that achieving emissions reductions through energy efficiency investments is an important step toward climate justice. Emissions reductions flow from electricity reductions as well as from home weatherization. The data supports the conclusion that energy efficiency resulting in bill reductions is an important tool to use in generating improved bill affordability. The non-energy avoided costs (*e.g.*, reduced working capital, with its supplemental rate reduction associated with the equity return earned on working capital; reduced uncollectibles) merit deeper savings than might otherwise be available.

When low-income homes are treated with energy efficiency measures, they should be treated on a whole-house basis, including the replacement of appropriate electric appliances.

Recommendation #3: Focus should incorporate a special focus on low-income multi-family dwellings.

Treating multi-family housing with energy efficiency is particularly important when one seeks to reach a lower income recipient population. Multi-family housing (defined as buildings with five or more units), one researcher notes, comprises 17 percent of all housing units in the United States.[31] Moreover, multi-family housing overwhelmingly is rental housing. Nationwide, 83 percent of multi-family housing units are rental buildings, while only 17 percent are owner-occupied. Multi-family housing comprises more than 40 percent of the entire rental stock in the United States.[32] In Wisconsin, 35 percent of all rental housing consists of housing units with five or more units in the structure.[33]

In the United States, lower incomes are closely related with residence in multi-family housing. Pivo reports that multi-family housing shelters one quarter (27%) of the

[31] Pivo (2012). Energy Efficiency and its Relationship to Household Income in Multifamily Rental Housing. at 1, Fannie Mae: Washington D.C.

[32] Nedwick, et al. (2013). Partnering for Success: An Action Guide for Advancing Utility Energy Efficiency Funding for Multifamily Rental Housing, National Housing Trust: Washington D.C.

[33] Table B25033, American Community Survey, 5-year, 2019.

nation's very low-income renters. Nearly all (93%) of very low-income households living in multi-family housing are renters.

It is well-established that there is significant potential for energy efficiency savings in the multi-family housing sector. "The potential for energy savings in this sector," one study found, "is huge and largely untapped."[34] Energy efficiency in multi-family housing could be improved by about 30 percent.[35] One reason for this is the relatively older age of multi-family housing relative to single-family housing. Most multi-family housing throughout the nation was constructed before 1978, the year the nation's first building energy code was enacted (in California). Similarly, in Wisconsin, 54% of multi-family housing units (5+ units in structure) were built before 1980.[36] This housing was not constructed to the same energy code standards of subsequently constructed housing.

Multi-family housing is substantially less efficient than other housing types. One study, for example, examined the prevalence of Energy Efficiency Features ("EEFs"), defined to be "physical attributes that reduce the amount or cost of energy required for a given level of energy service."[37] The study concluded that "multifamily rentals were less energy efficient than other housing in 2005 and . . . the gap persisted into 2009." While there was some improvement from 2005 to 2009, "it was modest."[38] The study reported:

> Overall, 87.5 percent of the EEFs (21 of 24) were significantly less common in multifamily rentals than in other housing in 2005 (at the .10 significance level or better). By 2009, this difference had been reduced to 75 percent, though clearly the deficiency in multifamily housing remained.
>
> In the 2005 sample, every HVAC EEF, all but 1 building envelope EEF, and 9 of the 11 appliance EEFs were significantly less common in multifamily rentals. Only 1 feature was more common in multifamily rentals (2000+ vintage clothes dryers), and only 1 was equally common (natural gas cooktop). In the 2009 sample, all but one HVAC EEF (2000+ vintage ac), every building envelope EEF, and 6 of 11 appliance EEFs were

[34]Benningfield Group (2009). U.S. Multifamily Energy Efficiency Potential by 2020, at 6, Benningfield Group: Folsom (CA).

[35] As Benningfield notes, "this is the 'achievable' energy efficiency potential, which means it is both economically reasonable and within normal budget constraints. The economic energy efficiency potential is estimated to be 59% of multifamily energy use. The technical potential is even larger: over 80%." Benningfield Group, 4.

[36] Table B25127, American Community Survey, 5-year, 2019.

[37] Pivo, supra note 32, at 4.

[38] Id., at 5.

significantly less common in multifamily rentals, compared to other housing.[39]

Wisconsin's energy efficiency and electrification programs funded through Focus should ensure that multi-family units are not unreasonably excluded. Because of the unique barriers presented by multi-family units, and the unique potential for generating usage and emission reductions, a special focus on low-income multi-family units is recommended.

Recommendation #4: There should be a focus on low-income electrification in addition to low-income efficiency.

Programs designed to promote electrification should be explicitly designed to avoid excluding low-income households, including low-income renters. A 2020 report by the Sierra Club, Mothers Out Front, and Physicians for Social Responsibility (hereafter, Sierra Club et al.) clearly document the indoor air quality problems associated with natural gas appliances.[40] That 2020 report found, for example, indoor air is largely unregulated and is often more polluted than outdoor air; that gas stoves can be a large source of toxic pollutants indoors; that indoor air pollution from gas stoves can reach levels that would be illegal outdoors; that there are well documented risks to respiratory health from gas stove pollution.[41] "During the winter," the Sierra Club report found, "when ventilation in homes is the lowest, 55-70 percent of homes with gas stoves without ventilation may experience air quality that would be illegal outdoors."[42]

The Sierra Club at al. further found that lower-income households may be at higher risk of gas stove pollution exposure. Factors contributing to this increased risk include smaller unit size and high occupant density (more people inside the home).[43] The Sierra Club et al. study cited findings from Adamkewicz, which are particularly applicable to Wisconsin. HUD defines "overcrowded" housing as being units with more than 1.0

[39] Id., at 4-5.

[40] Seals and Krasner (2020). Health Effects from Gas Stove Pollution, Sierra Club, Mothers Out Front, Physicians for Social Responsibility.

[41] Seals and Krasner, supra, at 5 (internal notes omitted).

[42] Id., at 21, citing, logue et al. (2014). Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California, Environmental Health Perspective (vol. 122).

[43] Id., at 14, citing Adamkiewcz, et al. (2011). Moving Environmental Justice indoors: Understanding Structural Influences on Residential Exposure Patterns in Low-Income Communities, American Journal of Public Health,

person per room.[44] In Wisconsin, while only 1.3% of owner-occupied housing is "over-crowded" by this standard, more than twice that percentage (3.0%) of rental housing is considered over-crowded. Moreover, those over-crowded units are located primarily in low-income ZCTAs.[45] Adamkiewicz's caution about smaller housing units should raise caution in Wisconsin as well. Smaller housing units in Wisconsin, as measured by the distribution of the number of rooms,[46] and the median number of rooms,[47] are located primarily in rental units, and primarily in low-income ZCTAs. The same findings can be made if housing unit size is measured by the number of bedrooms rather than by the number of rooms.[48]

In Wisconsin, the need to electrify to reduce carbon emissions does not end with natural gas cooking. Natural gas usage for space heating is primarily, but not exclusively, the province of homeowners. In the 774 Wisconsin ZCTAs studied, while 70% of homeowners heat with natural gas, only 56% (still more than half) of Wisconsin renters (437,855 of 777,217) heat with natural gas. Of the 774 ZCTAs, more than half of all renter-occupied housing units are heated with natural gas in 274 ZCTAs; more than 75% of all renter-occupied housing units are heated with natural gas in 48 ZCTAs.

To the extent that electrification initiatives do not specifically address the ability to electrify the low-income households who disproportionately comprise these renters, not only will these low-income households be "left behind" and thus subject to the health effects associated with the indoor air quality problems caused by natural gas appliance, but will also be "left behind" and subject to the increased utility rates resulting from fixed costs being spread over an increasingly smaller customer base.

Ignoring the health impacts associated with being left behind has a particular impact on low-income Black communities. As Table 11 below shows, of the 57 R/ECAP Census Tracts in Milwaukee County, the asthma rate ranges from 10% to 15%. In only three of these R/ECAP Census Tracts does the asthma rate drop to as low as 10%, while in 32 of the 57 Milwaukee County R/ECAP Census Tracts the asthma rate is 14% or more. With the exception of those three Census Tracts with the lowest asthma rate, the average of the mean First Quintile incomes in these Census Tracts was roughly $6,200 or less.

[44] See, generally, Blake, Kellerson and Simic, Measuring Overcrowding in Housing, at 5 ("We use a standard for PPR of more than one person in our analysis."), available at https://www.huduser.gov/publications/pdf/measuring_overcrowding_in_hsg.pdf (last accessed November 16, 2021).

[45] Table B25014, American Community Survey, 5-year data, 2019.

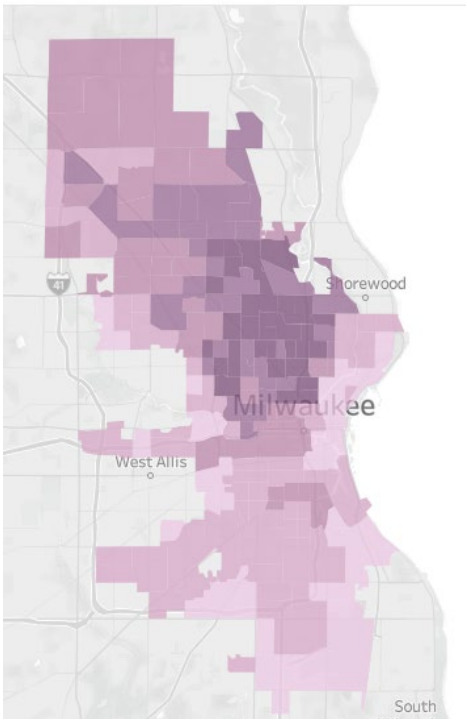
[46] Table B25020, American Community Survey, 5-year data, 2019.

[47] Table B25021, American Community Survey, 5-year data, 2019.

[48] Table B25042, American Community Survey, 5-year data, 2019.

Table 11. Asthma Rate and Mean First Quintile Income Milwaukee County R/ECAP Zip Codes		
Row Labels	**Count**	**Average of Mean First Quintile Incomes**
10%	3	$8,012
11%	11	$5,608
12%	7	$5,456
13%	4	$5,501
14%	22	$6,231
15%	10	$5,294
Grand Total	**57**	**$5,904**

The image below gives an indication of the inability to access energy efficiency and electrification as a means to improve health outcomes in Milwaukee's R/ECAP Census Tracts. The asthma rates range from 8% of the population (light purple) to more than 14% of the population (deep purple).



It is clear that the areas of Milwaukee with the highest asthma rates are those R/ECAP Census Tracts. The R/ECAP Census Tracts are located primarily in the central city area and move south.

The same household characteristics that impede low-income investments in energy efficiency would also impede low-income investments in electrification as well. While efforts to include low-income households in usage reduction efforts are frequently discussed, efforts to ensure that electrification initiatives are just as inclusive should be made as well.

Recommendation #5: There should be an explicit approval of allowed non-energy saving expenditures (e.g., health and safety measures).

The Staff's Report discusses the value of KPIs relating to "equity" which involve "participation." (Staff Memo, at 99). As the Staff Memo notes, a KPI relating to participation "assesses how customers are engaging with the product, program, or service. How well does the program remove participation barriers such as health and safety. . ." (Staff Memo at 99).

Low-income participation is often impeded by the presence of health and safety problems with a home. Health and safety issues associated with old and lower quality housing often prevent the delivery of energy efficient products and services ("walkaways") for both single-family and multi-family buildings. Health and safety issues might include roof repair, asbestos removal, mold removal, water infiltration repair, knob and tube wiring replacement, structural repairs, and pest control, amongst others.

The Commission should determine that Focus should allow for reasonable expenditures on health and safety remediation needed to proceed with low-income energy efficiency investments. These remediation expenditures should supplement and not supplant dollars that are otherwise available for energy efficiency measures. Hopefully, in a subsequent phase of this Quad IV proceeding, the Commission can evaluate and determine the appropriate funding level for health and safety repairs.

Recommendation #6: Endorse Staff* Memo *finding regarding the interplay between low-income decision-making and other aspects of the Quad IV proceeding.

The set of recommendations above demonstrate the strength of the Staff Memo's proposed low-income finding that "Decision alternatives for other Phase I issues do not conflict with the decision alternatives for this issue. Decisions on this issue will directly align with multiple decisions in Phase II of Quadrennial Planning Process IV." (Staff Memo, Attachment 1, page 3). Indeed, not only do the decision alternatives for other Phase I issues "not conflict" with low-income decision making, they specifically support and enhance those other decisions. The Commission should find a "lack of conflict" and note the affirmative supportive interrelationships (*i.e.*, "direct alignment" in the words of the Staff Memo) where appropriate.

V. Defining "Income Eligibility."

The Staff Memo posits two different "alternatives" involving the definition of "low-income" for purposes of offering "income qualified" programs. Alternative #1 (Staff Memo, page 102) proposes that Focus should continue to offer income-qualified

programs to households with income at or below 60% of the State Median Income ("SMI"). Alternative #4 (Staff Memo, page 103) proposes that Focus should also continue to offer income-qualified programs to households with income greater than 60% SMI but at or below 80% SMI.

The Commission should approve both Staff alternatives.

First, I identify the income, in dollars, that is implicit in using 60% of SMI and 80% of SMI. Wisconsin's income for a three-person household at 60% of SMI in 2019, as published by the federal LIHEAP office,[49] was $46,318.[50] If 60% of SMI is $46,318, 100% of SMI is $77,197 ($46,318 / 0.60 = $77,197). In turn, if 100% of SMI is $77,197, 80% of SMI is $61,757 ($77,197 x 0.80 = $61,757).

Having identified these dollar amounts (for a 3-person household) (60% SMI = $46,318; 80% SMI = $61,757), I can demonstrate the reasonableness of the Staff alternative to continue to provide assistance for households with income between 60% and 80% of SMI. Whether these two income limits (60% SMI, 80% SMI) reasonably capture low-income status for purposes of the design of Focus programs can be assessed by comparing these income figures to Wisconsin's Self-Sufficiency Standard developed for the Wisconsin Department of Workforce Development.

The Self-Sufficiency Standard was prepared for the State of Wisconsin by the Center for Women's Welfare ("CWW") at the University of Washington. According to CWW, the Self-Sufficiency Standard "defines the income working families need to meet a minimum yet adequate level, considering family composition, ages of children, and geographic differences in costs. The Standard is an affordability and living wage economic security measure that provides an alternative to the official poverty measure." The Standard presents the dollars of income needed to be self-sufficient in each Wisconsin county for

[49] Care must be taken in talking about State Median Income. At times, reference is made to SMI data published by the U.S. Department of Housing and Urban Development ("HUD"). HUD's data, however, is published for *families*, not for households. A "family," however, must have at least two people, whereas a "household" can have one person. The more appropriate SMI data to use, therefore, is the federal LIHEAP office's annually published 60% of SMI for households.

[50] LIHEAP Information Memorandum 2019-02 (August 7, 2019), available at https://www.acf.hhs.gov/sites/default/files/documents/ocs/comm_liheap_smiimattachment_1_fy2019.pdf (last accessed March 17, 2022). The 2022 SMI for a three-person household, as published by the Federal LIHEAP office was $50,243. https://www.acf.hhs.gov/sites/default/files/documents/ocs/COMM_LIHEAP_IM03%20Attachment1%20SMITable_FY2022.pdf (last accessed March 17, 2022). Since the most recent Self-Sufficiency Standard published for the Wisconsin Office of Workforce Development was for 2019, the 2019 SMI will be used for purposes here.

719 different families of varying family sizes and compositions. The Self-Sufficiency Standard is set by county.

In Appendix B, I present the Self-Sufficiency Standard for all 81 Wisconsin counties for six different three-person households. A 3-person household is a typical household size in Wisconsin.[51] To place some boundaries on the data presented in Appendix B, Table 12 immediately below summarizes the lowest (minimum) and highest (maximum) Self-Sufficiency Standard for the six families studied in the 81 Wisconsin counties, along with the median.

As can be seen, using either 60% or 80% of the State Median Income will result in an under- or over-estimation of financial needs when applied to individual counties in Wisconsin. Nonetheless, the 60% SMI figure reasonably reflects the median Self-Sufficiency Incomes (3-person), while the 80% SMI figure reasonably reflects the maximum Self-Sufficiency Incomes (3-person).

Table 12. Minimum and Maximum Self-Sufficiency Standard ("SSS"): Six 3-person Families Amongst the 81 Wisconsin Counties in Appendix B[52]

	Adult/Infant/ Preschooler	Adult/ Preschooler/ School-age	Adult/ School-age (x2)	2 Adults/Infant	2 Adults/ Preschooler	2 Adults/ School-age
Minimum SSS	$40,828	$38,186	$36,572	$39,899	$38,755	$37,102
Maximum SSS	$77,741	$69,243	$64,318	$63,366	$60,679	$55,717
Median SSS	$51,679	$49,320	$48,214	$46,771	$46,115	$44,017
60% SMI (3-person)	$46,318	$46,318	$46,318	$46,318	$46,318	$46,318
80% SMI (3-person)	$61,757	$61,757	$61,757	$61,757	$61,757	$61,757

The conclusion to draw from the data and discussion above is that when the PSC takes income into account to ensure an equitable distribution of energy efficiency investments, by addressing the market barriers that are unique to low-income households that would cause such households to be left behind in the absence of external assistance (as discussed in detail above), use of a two-tiered Focus program, with one tier being directed toward households with income at or below 60% of SMI and the second tier being directed toward households with income greater than 60% SMI but at or below 80% of SMI, appears to be supported by the data.

[51] Table B25010, American Community Survey, 5-year data, 2019.

[52] For each family composition below, Dane County is most expensive, while Menominee County is least expensive.

My recommendation is that the Commission should approve Staff's proposed Alternative #1 and Alternative #4.

VI. "Focus" Pilot Programs.

The Staff Memo identifies Focus as appropriately testing concepts for improving program design and outreach through a "pilot" process. Staff Alternative #3, in particular, proposes developing a pilot "community outreach" program. Sierra Club enthusiastically supports a pilot program and recommends Milwaukee for the pilot program and anther Payment-Trouble Targeting pilot program.

A. Pilot Program Recommendation #1: The Commission should approve Staff's proposed "community outreach" program and locate it in Milwaukee.

The Staff Memo presents as one of its "alternatives" the proposal that "the Focus program should continue to offer income-qualified programs and should additionally explore developing a community-based pilot(s) in one or more communities." (Alternative #3, page 103). This Alternative is particularly well-grounded. The discussion below provides a substantive basis for adoption of this proposal.

One particular area of inquiry supports adoption and implementation of Alternative #3 in the Staff Memo. This inquiry begins with an identification of "Racially or Ethnically Concentrated Areas of Poverty" (R/ECAP) in Wisconsin and considers characteristics in those areas that would affect their ability to participate in energy efficiency or electrification initiatives in the absence of Focus assistance.

HUD explains why it developed the R/ECAP construct:

> To assist communities in identifying racially/ethnically-concentrated areas of poverty (R/ECAPs), HUD has developed a census tract-based definition of R/ECAPs. The definition involves a racial/ethnic concentration threshold and a poverty test. The racial/ethnic concentration threshold is straightforward: R/ECAPs must have a non-white population of 50 percent or more. Regarding the poverty threshold, Wilson (1980) defines neighborhoods of extreme poverty as census tracts with 40 percent or more of individuals living at or below the poverty line. Because overall poverty levels are substantially lower in many parts of the country, HUD supplements this with an alternate criterion. Thus, a neighborhood can be a R/ECAP if it has a poverty rate that exceeds 40% or is three or more times

> the average tract poverty rate for the metropolitan / micropolitan area, whichever threshold is lower. Census tracts with this extreme poverty that satisfy the racial/ethnic concentration threshold are deemed R/ECAPs.
>
> * * *
>
> While this definition of R/ECAP works well for tracts in CBSAs, places outside of these geographies are unlikely to have racial or ethnic concentrations as high as 50 percent. In these areas, the racial/ethnic concentration threshold is set at 20 percent.[53]

Wisconsin has 62 Census Tracts that are currently identified as R/ECAP Tracts, which represents a substantial expansion over the past 20 years. Wisconsin had 26 R/ECAP Census Tracts in 2000, 50 R/ECAP Census Tracts in 2010 and 62 R/ECAP Census Tracts now. Of Wisconsin's 62 current R/ECAP Census Tracts, three are in Racine County, one is in Kenosha County, one is in Menominee County and the remaining 57 are in Milwaukee County.

The 57 R/ECAP Census Tracts in Milwaukee County have very high home energy burdens, especially for the low-income population within those 57 census tracts. The energy burden for the low-income population in the 57 R/ECAP Census Tracts range from 8.3% to19.3%, with the median being 12.8%. This is considerably higher than the energy burden for the residential population as whole for the 57 R/ECAP Census Tracts, which is still relatively high in general. In fact, for all residential customers, 26 Census Tracts have home energy burdens at or above 6% of income. The data on energy burdens for the 57 R/ECAP Census Tracts is in Table 13 below.

[53] HUD (2022). Racially or Ethnically Concentrated Areas of Poverty, available at https://hudgis-hud.opendata.arcgis.com/datasets/HUD::racially-or-ethnically-concentrated-areas-of-poverty-r-ecaps/about (last accessed March 18, 2022).

Table 13. Residential Energy Burdens as Whole v. Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts				
	Residential		Low-Income (Subset of Residential)	
Minimum	3.1%		8.3%	
Maximum	9.6%		19.3%	
Median	6.0%		12.8%	
Distribution of Residential Energy Burdens and Low-Income Energy Burdens Milwaukee County R/ECAP Census Tracts				
	Distribution of Residential Burdens		Distribution of Low-Income (Subset of Residential) Burdens	
<3%	0		<9%	4
3% - <6%	28		9% - <12%	14
6% - <7%	14		12%-<14%	19
7% - <8%	10		14%-<16%	11
8% - <9%	3		16%-<18%	7
9% or more	2		18% or more	2
Sum	57		Sum	57

The distribution of home energy burdens for residential customers as a whole, and for low-income residential customers is set forth in the Table. This is starkly higher than the burdens for the population as a whole in the same Census Tracts.

Milwaukee County's Census Tracts that have home energy burdens at or above 6% of income have a distinctly different racial and ethnic make-up than the Census Tracts with burdens below 6% of income.

- The population of Milwaukee County Census Tracts with burdens less than 6% is 22.3% Black, while the Census Tracts with burdens at or above 6% is 67.4% Black.

- The population of Milwaukee County Census Tracts with burdens less than 6% is 55.7% White, while the Census Tracts with burdens at or above 6% is 8.7% White.

- The population of Milwaukee County Census Tracts with burdens less than 6% is 14.4% Hispanic/Latinx, while the Census Tracts with burdens at or above 6% are 18.4% Hispanic/Latinx.

The demographics of high burden Milwaukee Census Tracts is discussed in more detail in the *Milwaukee Report* attached as Appendix C.

The reason(s) that Staff's Alternative #3 is commendable is that the population characteristics in the Milwaukee County R/ECAP Census Tracts exhibit those characteristics indicating that in the absence of Focus assistance, they could not invest in energy efficiency.

In my discussion above, I examine those household characteristics that prevent low-income households from investing in energy efficiency even if such investments would generate a positive payback in even the short- to medium-term.

- One barrier is the low household income. When someone worries about having money for rent or food each month, they will not "invest" money in energy efficiency. This lack of income is evident in the Milwaukee County R/ECAP Census Tracts. The non-weighted average ***annual*** income for the First Quintile of income in these 57 Census Tracts in 2019 was $5,938. (Table B19081, American Community Survey, 5-year data, 2019).[54] Even for the Second Quintile (those households between 20% and 40%), the non-weighted average Second Quintile income was only $15,754. In these 57 Census Tracts, in other words, 40% of the population had an annual income of less than $16,000, while 20% of the population had an annual income of less than $6,000.

- Another barrier is the tenure of residents. Being a tenant not only presents the "split incentive" problem, but it presents the problem of residents who would benefit from efficiency investments lacking "dominion interest" over the property and accompanying energy consuming systems and appliances. Tenants lack the authority to make decisions to improve their homes. In these 57 Milwaukee County R/ECAP Census Tracts, 74% of the occupied housing

[54] In determining "quintiles" of income, the Census Bureau rank orders each household by its annual income by geographic area (in this instance, Census Tracts). That rank ordering is then divided into five equal parts, each part which is known as a "quintile." The First Quintile (sometimes referred to as the "lowest Quintile) is that one-fifth of the population with the ***lowest*** income in the geographic area. It should be noted, however, that simply because a household is in the lowest one-fifth of income in a particular Census Tract, that household is not necessarily a "low-income" household. In a Census Tract with very high incomes, the lowest quintile of income can nonetheless still be quite high.

units are renter-occupied. (Table B25014, American Community Survey, 5-year data, 2019).

- Another barrier is the fact that low-income households tend to live in older homes in need of major investments, not merely upgrades to particular systems or appliances. In the 57 Milwaukee County R/ECAP Census Tracts, 81% of the tenants live in housing units that were constructed before building codes were enacted. Similarly, in these Census Tracts, 87% of the homeowners live in housing units that were built before 1970. (Table B25036, American Community Survey, 5-year data, 2019).

These barriers which prevent low-income households from being able to invest in energy efficiency improvements are particularly evident in the R/ECAP Census Tracts in Milwaukee County. Further supporting the Staff's recommended Alternative #3 is the *Milwaukee Report* on energy affordability in Milwaukee (Appendix C).

The Commission should approve the Staff's Alternative #3 and establish a community-based pilot program in Milwaukee R/ECAP Census Tracts.

B. Pilot Program Recommendation #2: At least two major electric and/or natural gas utilities should undertake a pilot "payment-troubled customer" program.

The Payment Troubled Customer Targeting Pilot recommended below builds on the data and discussion presented above documenting the relationship between low-income status and payment-troubled status. It further builds on the documented findings elsewhere regarding how energy efficiency targeted to payment-troubled low-income customers can generate not only the traditional energy and capacity avoided costs, but the whole range of avoided costs associated with improved payment patterns.

Income *eligibility* for a pilot low-income usage reduction program targeted to payment-troubled customers should remain at the current level for overall low-income programs. This proposed pilot project should not change the income *eligibility* levels for low-income programs. Wisconsin's low-income Focus programs, however, should also establish certain *targeting* objectives. The difference between setting "eligibility standards" and setting "targeting objectives" is not new to low-income home energy programming. For example, the federal LIHEAP statute establishes income eligibility as not to be less than 110% of Poverty Level or more than 60% of State Median Income ("SMI"). Under the federal LIHEAP statute, however, three populations within that income-eligible population are to be *targeted* for assistance: (1) the elderly; (2) households with young children; and (3) the disabled.

Wisconsin should establish a pilot low-income payment-troubled customer program, however, to target low-income usage reduction investments based on the following non-exclusive[55] factors:

- **High energy usage:** Research has shown that the single greatest predictor of energy usage reduction potential is high consumption prior to efficiency measures being implemented.

- **High arrearages:** High arrearages and high usage frequently, but do not universally, correspond. Customers with high arrearages disproportionately tend to have high usage as well. Targeting low-income customers with high arrearages generates the following benefits: (1) high arrearages have been associated with a greater usage reduction potential; (2) directing usage reduction to low-income customers with high arrearages can reduce the utility's non-energy costs whether or not the arrearages are reduced to $0. For example, if usage reduction investments can help a low-income customer reduce his or her arrearage from $500 to $300, the utility pockets the working capital savings associated with carrying those $200 in reduced arrearages (along with a potential reduction in bad debt if those arrears are ultimately written off).

- **Broken/defaulted deferred payment arrangements:** A low-income customer on a deferred payment arrangement ("DPA"), by definition, is in arrears. To the extent that a customer has a history of negotiating a DPA, that customer has evidenced a willingness to work with a utility to address his or her nonpayment, even though the DPA default indicates that effort was unsuccessful. To the extent that usage reduction can reduce the bill for current service, the low-income customer is more likely to pay that total asked-to-pay amount. As discussed above, not only will the ultimate risk of lost revenue due to nonpayment be reduced, but the immediate working capital associated with any delayed collection of revenue will be reduced as well. Defaulting on a DPA should be an indicator of payment-troubled status for purposes of targeted low-income usage reduction.

- **Disconnection for nonpayment:** A disconnection (or multiple threats of disconnection) of service for nonpayment within the immediately preceding two-year period should establish payment-troubled status for purposes of targeting usage reduction. A disconnection for nonpayment is the ultimate indicator of payment-troubled status. Even if the disconnection was avoided subsequent to the issuance of

[55] By "non-exclusive," I mean that customers may fall into one or more of these categories.

a notice, that level of payment-trouble should prioritize a household for low-income usage reduction services.

The non-exclusive factors I identify above are targeting objectives to identify low-income customers to enroll in usage reduction programs, not ***eligibility*** criteria for low-income usage reduction.

Before discussing how the integration of usage reduction with credit and collection activities should occur, it is helpful to first identify how integration should ***not*** occur. The integration of usage reduction into a utility's credit and collection processes cannot simply involve providing notice of the availability of the low-income usage reduction program as part of a shutoff notice. In 1999, I researched for the federal LIHEAP office the reasons why low-income customers do not engage in "constructive responses" when faced with an inability-to-pay.[56]

- I found that some "constructive responses" standing on their own do not address the underlying affordability problem facing the customer. I reported that "Low-income customers, however, frequently have little incentive, and even fewer choices, to pursue one of these constructive responses to bill unaffordability. Enrolling in a usage reduction program to reduce high bills on a going-forward basis, for example, does not help pay the existing arrears unless coupled with a reasonable long-term deferred payment plan. Conversely, agreeing to a deferred payment arrangement does not address affordability on a going-forward basis unless some adjustment can be made in either the level of the bill or the level of household resources available to pay for the bill."

- I found further that by the time a shutoff notice has been issued, the time for a low-income customer to engage in a "constructive response" has lapsed. I reported that: "All too frequently, the customer is faced with an immediate need (*i.e.*, bill payment by a date certain) with the available constructive responses to an inability-to-pay unable to deliver assistance either in the form, the time period, or the magnitude necessary to meet that need. Given the immediate consequences of failing to address the short-term nonpayment crisis, the customer is pushed into the negative actions identified in this research."

[56] Colton (1999). Measuring LIHEAP's Results: Responding to Home Energy Unaffordability, prepared for the LIHEAP Advisory Committee on Managing for Results, U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance (federal LIHEAP office).

Accordingly, as part of this Pilot, Wisconsin utilities should engage their credit and collection records as a means to identify low-income households that might benefit from participation in the proposed low-income usage reduction program.[57] A utility should routinely inquire of its customer information system ("CIS") which customers meet the targeting criteria outlined above. The resulting lists of tagged customers generated through this use of the information technology should be provided to community-based organizations ("CBOs") working with, and under contract to, each utility for those CBOs to engage in the outreach and intake process.

In sum, the Pilot project recommended here involves the following steps:

- While income eligibility for the low-income usage reduction component added to the low-income bill assistance programs should remain as it is, the Pilot program should establish certain targeting objectives based on indicators of payment-troubled status and high usage.

- Utilities engaged in the Pilot should routinely inquire of their Customer Information System ("CIS") which customers meet the payment-troubled targeting criteria. The resulting list of tagged customers should be provided to CBOs working with, and under contract to, the utilities for those CBOs to engage in outreach and intake specifically targeted to these payment-troubled customers in message and outreach platform.

A Wisconsin Payment-Troubled Targeting Pilot can be modeled on the DTE Payment-Troubled Initiative ("PTCI") pilot program adopted as part of a settlement of a proceeding reviewing DTE's "Energy Waste Reduction" ("EWR") plan.[58] That pilot was conducted from 2020-2021 and its evaluation is ongoing. Through the PTCI, DTE agreed that its EWR staff and its Revenue Management and Protection staff would coordinate to provide energy efficiency services to payment-troubled customers participating in the utility's Low-Income Self-Sufficient Plan ("LSP") and Shutoff Protection Plan ("SPP"). The intent of the initiative was to help payment-troubled customers better manage their utility bills through the coordinated combination of low-income payment plans and EWR services.

For purposes here, the metrics to be used in the evaluation are important for assessing the pilot. DTE agreed that it would evaluate the PTCI pilot based on payment behavior

[57] See generally, Colton (1999). *The Use of Utility Data Processing Records as a Data Mining Source on Low-Income Consumers: Converting Information to Knowledge*, prepared for Affordable Comfort, Inc. (1999).

[58] This DTE pilot differs from the Consumers Energy pilot approved by the Michigan PSC in March 2021 and is attached as an Appendix.

during the initiative (*e.g.*, percent on-time payments, percent disconnect notices / disconnections, average monthly arrearage balance) in addition to evaluating the traditional factors of kWh/therm savings.

The Payment-Troubled Pilot recommended above has precedent in Michigan. Wisconsin's Focus program would be well-served to model such a pilot on the DTE effort.

VII. Community Participation / Transparency.

The Staff Memo should be commended for incorporating a discussion of community participation that is largely supportive of the needs identified in the Governor's *Climate Change Report*.

The Governor's *Climate Change Report*, for example, discussed "climate justice and equity" in these terms:

> Climate justice is an extension of environmental justice, a movement born out of the U.S. Civil Rights Movement of the 1960s. The EPA defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." In practice, achieving environmental justice means guaranteeing that these vulnerable communities receive equal protection from environmental and health hazards, and <u>equal access to the decision-making process that determines their economic and energy outcomes</u>.

(Governor's *Climate Change Report*, at 22) (emphasis added) (internal notes omitted). With respect to "energy" in particular, that Governor's Report went on to state:

> All decarbonization efforts should incorporate equity considerations from the onset, through planning, design, and implementation. Without careful design, planning, and community input, programs designed to decarbonize the energy sector may have unintended consequences that worsen inequity. Low-income households face higher energy burdens (the portion of income spent on energy bills) and greater energy insecurity than higher-income households, and also face disproportionately high health impacts from indoor and outdoor air pollution. Because of this, low-income customers

> can most directly benefit from energy efficiency programs and renewable energy projects, but the planning, design, and implementation of the programs and projects must be undertaken with input from these communities to ensure that all aspects are undertaken to maximize the benefit on these communities.

(Governor's *Climate Change Report*, at 28) (emphasis added) (internal notes omitted).

The Staff should be commended for carrying forward these concerns in its discussion of "equity" in the Focus programs. The Staff Memo noted that "other efficiency programs are establishing metrics and KPIs focused on equity to complement more traditional goals focused on resource acquisition, such as MWh savings. Equity measurement frameworks can include a mix of quantitative goals and qualitative approaches depending on priorities." (Staff Memo, at 99). Staff noted that these "equity measurements can be grouped into categories" such as participation, accessibility, and impact. (Staff Memo, at 99).

For purposes here, however, it is the final element of the Staff discussion that is critical. Staff noted that one important priority is:

> **Community Engagement:** This category assesses how well the organization is engaging with income-qualified customers to involve them in all aspects of decision-making and participation. How well did the program team engage with this community during the design, delivery, and evaluation stages of the program?

(Staff Memo, at 99). The Commission should ensure that ongoing Focus planning, funding, and implementation decisions provide for meaningful public participation. This phrase, "meaningful public participation," has developed a well-defined set of components in the environmental justice arena.[59]

The Commission need not prescribe specific actions to be taken in order to ensure "meaningful public participation." However, the Commission should adopt the Staff recommendation that specific KPIs be adopted with respect to "how well did the program team engage with the community during the design, delivery, and evaluation stages of the program."

[59] *See e.g.*, U.S. Environmental Protection Agency, Public Participation Guide, available at https://www.epa.gov/sites/default/files/2014-05/documents/ppg_english_full-2.pdf (last accessed March 21, 2022).

The Commission should also join those who endorse the following statements defining "meaningful public participation":

> Meaningful public participation means that: (1) people have an opportunity to participate in decisions about programs and policies that may affect their environment or their health; (2) the public's contribution can influence the decision making; (3) community concerns will be considered in the decision-making process; and (4) decisionmakers will seek out and facilitate the involvement of those potentially affected.

Moreover, the Commission should adopt the following principles with respect to providing for "community engagement" (in the words of the Staff Memo) or "meaningful public participation" (in the vernacular of environmental justice) and with respect to developing KPIs with respect to community engagement and meaningful public participation:

A. Proactive steps incorporate: (1) facilitating ongoing opportunities for direct interaction between agencies and communities; (2) allocating funding for staff positions trained and dedicated to community outreach and facilitating collaborations; (3) choosing arrangements for community interactions to maximize effective participation, taking into account factors such as meeting times, locations, and translation needs; (4) ensuring that affected individuals and communities have access to sufficient information to enable them to meaningfully participate in activities; (5) ensuring sufficient time for meaningful interaction before decisions have been made or unalterable commitments entered into; and (6) ensuring transparency in decision-making.

B. Meaningful public participation means that: (1) potentially affected community residents have an appropriate opportunity through a process, not merely an event, to participate in decision-making about a proposed program or policy that may affect their access to safe, clean, affordable, adequate, sufficient and accessible services; (2) the contribution of the public can influence the provider's decision-making; (3) the concerns of the public will be considered in the decision-making process; (4) the decision-makers seek out and facilitate the involvement of those potentially affected; and (5) the decision makers undertake actual documented consideration of the public input received.

C. Meaningful public participation requires that stakeholders shall be able to access adequate, accessible and necessary information as soon as it is known, to allow them to prepare to participate effectively, in accordance with the principle of maximum disclosure.

1. Relevant information shall be proactively disseminated by making it available in a manner appropriate to local conditions and taking account of the special needs of individuals and groups that are marginalized or discriminated against.
2. Relevant information shall be provided free of charge or at a reasonable cost and without undue restrictions on its reproduction and use both offline and on-line.

D. Meaningful public participation requires that stakeholders be able to participate in the decision-making process from an early stage when all options are still open. Decision-makers shall refrain from taking any formal, irreversible decisions prior to the commencement of the process. No steps shall be taken that would undermine public participation in practice, such as large investments in the direction of one option, including those agreed with another agency, a non-government actor, or state or local government entity, or some combination thereof.

E. Meaningful public participation shall be provided into multi-year or repeating decision making that will generate present and reasonably foreseeable cumulative future impacts on the provision of safe, clean, affordable, adequate, sufficient and accessible services.

VIII. Key Performance Indicators and Data Collection.

The introduction of the use of Key Performance Indicators ("KPIs") through the Staff Memo is an important advance in the design and evaluation of energy efficiency and emission reduction programs in Wisconsin. While the Staff Memo does not discuss KPIs in terms of "outcomes," the discussion it presents appears to be based on an assessment of outcomes.

Measuring "outcomes" is to be distinguished from measuring "activities" and measuring "outputs." An "activity" is defined as the work performed that directly produces products or services. The "output" of an activity is the direct result of program activities. The "outcome" of a program is the accomplishment of program objectives attributable to program outputs.

Performance measurement has been growing now for nearly 30 years in both public and private programs. Perhaps the best-known application is the federal Government Performance and Results Act of 1993. GPRA was designed to address the same conceptual issues that a Wisconsin utility must address for its low-income energy efficiency programs (or energy efficiency programs of any sort for that matter): "to grapple with how to best improve effectiveness and service quality while limiting costs." It shifts the focus from program activities to program results.

According to GPRA, "The key concepts of this performance-based management are the need to define clear agency missions, set results-oriented goals, measure progress toward achievement of those goals, and use performance information to help make decisions and strengthen accountability." Utilities face the same sort of problems in measuring efficiency as do federal agencies. As the U.S. General Accounting Office has observed, "Many agencies have a difficult time moving from measuring program activities to establishing results-oriented goals and performance measures."[60]

The GAO explains further: "[A]gencies must move beyond what they control–that is, their activities–to focus on what they merely influence–their results." In this observation, one easily could replace the word "agencies" with the word "utilities."

Federal agencies have been given substantial guidance on the aspects of GPRA that relate to adequate and appropriate performance measures. One report, entitled Executive Guide: Effectively Implementing the Government Performance and Results Act, reviewed both private and governmental (including foreign) agencies and concluded that the most successful performance measures embraced four characteristics: (1) tied to program goals and showed the degree to which results were achieved; (2) included only data necessary for decision-making; (3) responded to multiple priorities and forced managers and policymakers to consider competing interests and demands; and (4) established accountability for results.

In offering the proposed KPIs below as a mechanism by and through which to measure the performance of Focus, one caution is necessary. The collection of data on performance indicators is only important to the extent that such data is put to use in managing the process being evaluated. One crucial element of performance management is establishing and reporting the desired goals so that gaps in performance can be

[60] James Hinchman (Acting Comptroller General). (June 24, 1997). Managing for Results: The Statutory Framework for Improving Federal Management and Effectiveness, at 1, Testimony before U.S. Senate Committee on Appropriations and Committee on Governmental Affairs (GAO/T-GGD/AIMD-97-144).

identified and rectified. GPRA provides guidance on how to approach the planning and utilization of performance data.[61] As implementation of GPRA has made clear:

> Even the best performance information is of limited value if it is not used to identify performance gaps, set improvement goals, and improve results . . . [S]uccessful organizations recognize that it is not enough just to measure outcomes . . . By analyzing the gap between where they are and where they need to be to achieve desired outcomes, management can target those processes that are in most need of improvement, set realistic improvement goals, and select an appropriate process improvement technique.[62]

The PSC Staff should be commended for introducing, through its recommended use of KPIs, an outcomes measurement approach to any ongoing review of the Wisconsin Focus program. The discussion below presents a series of performance metrics by and through which to measure the outcomes of low-income Focus programs.

A. Low-Income Key Performance Indicators.

The following KPIs are recommended for use in ongoing evaluations and assessments of the outcomes performance of low-income Focus programs. The Staff Memo indicates that one set of KPIs often being measured are "impact" measurements. (Staff Memo, at 99). KPIs #1 through #6 below present impact KPIs.

1. **Outcome measured:** Is Focus achieving the same savings in low-income homes as in non-low-income homes? Metric: Ratio of the percent of low-income energy savings per home to the percent of residential savings per home. A ratio of 1.0 is an indicator of equity.

2. **Outcome measured:** Is Focus reaching a proportionate share of low-income homes with deep savings? Metric: Ratio of the sum of the average kWh shared per home times the number of low-income homes treated to the average kWh shared per home

[61] See generally, Colton (1998). "Universal Service: A Performance Based Measure for a Competitive Industry, Public Utilities Fortnightly 136(12): 40; see also, Colton (2000). Integration of LIHEAP with Energy Assistance Programs Created through Electric and/or Natural Gas Restructuring, report for the LIHEAP Advisory Committee on Managing for Results, U.S. Department of Health and Human Services, Administration for Children and Families, Office of Community Services, Division of Energy Assistance (federal LIHEAP office).

[62] Johnny C. Finch (Assistant Comptroller General) and Christopher Hoenig (Director, Information Resource Management/Policies and Issues). (June 20, 1995). Managing for Results: Critical Actions for Measuring Performance, at 9, testimony before the U.S. House Subcommittee on Government Management, Information and Technology, Committee on Government Reform and Oversight.

times the number of residential homes treated. A ratio equal to the percentage of income-eligible households amongst all households is an indicator of equity.

3. **Outcome measured:** Is Focus achieving the same carbon reduction in low-income homes as in non-low-income homes? Metric: Ratio of the average carbon reduction in low-income homes to average carbon reduction in residential homes. A ratio of 1.0 is an indicator of equity.

4. **Outcome measured:** Is Focus allowing low-income customers to make payments and to avoid arrears at the same rate as residential customers do? Metric: Ratio of the percentage of revenue in arrears in treated low-income homes to percentage of revenue in arrears in residential homes. A ratio equal to 1.0 is an indicator of equity.

5. **Outcome measured:** Is Focus allowing low-income customers to pay the same percentage of their bills as residential customers pay? Metric: Ratio of the payment coverage ratio (*i.e.*, dollars of payments divided by dollars of bills) for treated low-income households to the payment coverage ratio in residential households. A ratio equal to 1.0 is an indicator of equity.

6. **Outcome measured:** Is Focus generating a substantive improvement in low-income home energy burdens through a reduction in energy usage? In measuring the impacts on energy burdens, it would be unreasonable to establish an objective of using Focus to *achieve* an affordable burden for all treated households. Some households have high energy burdens not because of high energy use, but rather because of very low incomes. In these instances, achieving an affordable burden is not a function of energy efficiency standing alone, but rather a function of combining energy efficiency with bill assistance. The outcome desired from Focus is an *improvement* in energy burdens. An energy burden reduced from 20% of income to 12% of income (an improvement even though the burden is still "unaffordable") may be even more important than an energy burden reduced from 9% of income to 5% of income.

Multiple advantages arise from the use of these outcome measurements. First, these measurements do not allow the low-income population to be treated with low-cost, but low-savings measures. The "inequity" in such treatments would routinely appear in Equity Ratios consistently less than 1.0. Second, these measurements can easily be modified to reflect particular interests of areas of inquiry. For example, one area of inquiry might involve a comparison not of low-income households to residential households, but rather of low-income households in "vulnerable" areas (*e.g.*, R/ECAP Census Tracts as discussed in this Statement) to low-income households generally.

The Staff Memo further indicates that one set of KPIs being measured involve "participation" measurements. Participation is a more difficult KPI to measure for low-income households. The purpose of "participation" is not to distribute "education" materials or low-cost, but low-savings, measures (*e.g.*, self-installed high efficiency lightbulbs, "kits' ' with low-flow aerators) to a large percentage of the low-income population. The purpose of participation is to engage low-income households in whole house energy efficiency treatments. Establishing a participation KPI thus requires setting a Focus objective of the level of desired participation. The KPI then measures the extent to which that objective has been achieved. A reasonable low-income participation objective is for Wisconsin to establish that it intends to treat 50% of all income-eligible households with energy efficiency needs within a ten-year period.

Given that objective, the participation KPI would thus be:

7. **Outcome measured:** Is Focus on-track to meet its ten-year participation objective? Metric: Cumulative percentage of income-eligible low-income households with weatherization needs treated.

B. Additional Low-Income Data Collection.

Before I begin, let me note several observations about my recommendations.

- First, on the one hand, there are data elements that I recommend being collected. On the other hand, there are other data elements that I argue are *not* particularly helpful. I will note both below.

- Second, within that data that I recommend being collected, my references to "accounts" (and related terms, *e.g.*, "customers") is intended to be limited to recipients of low-income energy efficiency investments.

- Third, while I state that data should be collected "by month," what I mean is that the data should be monthly data. That "monthly data," however, could be filed on a bi-annual or on an annual basis. There is no need to *receive* the data each month. When the PSC does receive data, however, that data should be "by month."

Given the above observations, I recommend reporting of the following data elements:

1. The dollars of bills for current service by month.

2. The dollars of actual receipts from customers[63] by month.[64]
3. The number of accounts receiving a bill by month.
4. The number of accounts making a payment by month.[65]
5. The number of disconnect notices issued by month.[66, 67]
6. The number of accounts in arrears;
7. The dollars of arrears by month;
8. The average arrears of accounts with arrears by month;
9. Conversely, the number of accounts with a $0 balance[68] by month;[69]
10. The number of Final Bills by month;
11. Pre- and post-treatment energy burdens.[70]

[63] The source of revenue is irrelevant. The phrase here "from customers" is, for example, not intended to distinguish receipts from LIHEAP and receipts paid out-of-pocket by customers.

[64] The combination of Metric #1 and Metric #2 allows us to look at the percentage of bills that are paid each month. If you place the dollars of bills (Metric #1) in the denominator and the dollars of receipts (Metric #2) in the numerator, you can calculate what percentage of bills is being paid on a monthly basis. You can also aggregate these monthly bills (and payments) so that you can examine the results (the term for this calculation is "payment coverage ratio") on an annual basis, on a seasonal basis, or on any other time period which you desire. For example, in an evaluation I performed of a Colorado energy affordability program, one question was the extent to which customers made payments after receiving a disconnect notice. I calculated a bill payment coverage ratio for the four months after the receipt of a disconnect notice. One additional question was the extent to which customers made payments after having service disconnected and reconnected (or whether customers simply fell back into arrears again). Again, that was tested by examining the payment coverage ratio for the four months subsequent to the reconnection.

[65] This allows us to see what percentage of people make ***some*** payment (while Metric #1 and Metric #2 allow us to see what percentage of the bill is paid).

[66] This is more important than the number of disconnections.

[67] Data elements 1, 2, 3, 4 and 5 also allow us to calculate a number of other metrics. For example, the number of disconnect notices per $1,000 in bills (or, similarly, the number of disconnect notices per $1,000 in payments) lets us see how hard the Company has to work to collect its revenue. Similarly, the number of disconnect notices per 1,000 bills provides insights into the extent of payment troubled status of customers. You can also "flip" these metrics. Looking at the amount of dollars received per disconnect notice allows us to assess the efficiency of collection. An increasing amount of revenue per disconnect notice may mean that the Company is issuing fewer disconnect notices, or that the Company is collecting more dollars, either of which is a positive development.

[68] Experience counsels that testing for whether an account has a $0 balance is easier than tracking whether a customer has made a payment "in-full" and "on-time" each month. In fact, it is the $0 balance which a utility should have the most interest in.

[69] In contrast, the extent to which customers make partial payments is determined through the "payment coverage ratio" discussed above. A "payment coverage ratio" of more than 0% and less than 100% indicates a partial payment.

[70] Tracking burdens has two impacts. On the one hand, it will allow the utility to track the number of customers who moved from having an *unaffordable* burden to having an *affordable* burden given the usage / billing reduction. On the other hand, it will allow the utility to track the reduction in burdens for those customers who continue to have an unaffordable burden despite having received energy efficiency investments.

What is conspicuously absent from the above list is the number of shutoffs. I don't *object* to counting the number of shutoffs. My experience, however, is that the number of shutoffs is not a very meaningful piece of information, given how it does not relate to whether a customer has an arrearage, or to how big the unpaid balance might be. "Final bills" are better than "shutoffs" because a metric based on Final Bills shows the number of customers actually leaving the system, whether due to a shutoff, or because they're "running" from a debt, or for some other reason.

Appendix A

Credentials of Roger D. Colton

My name is Roger Colton. My business address is 34 Warwick Road, Belmont, MA 02478. I am a principal in the firm of Fisher Sheehan & Colton, Public Finance and General Economics of Belmont, Massachusetts. In that capacity, I provide technical assistance to a variety of federal and state agencies, consumer organizations and public utilities on rate and customer service issues involving water/sewer, natural gas and electric utilities.

I work primarily on low-income utility issues. This involves regulatory work on rate and customer service issues, as well as research into low-income usage, payment patterns, and affordability programs. At present, I am working on various projects in the states of New Hampshire, Maryland, Pennsylvania, Michigan, Ohio, Tennessee, and Wisconsin. My clients include state agencies (*e.g.*, Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, Illinois Office of Attorney General), federal agencies (*e.g.*, the U.S. Department of Health and Human Services), community-based organizations (*e.g.*, New Hampshire Legal Assistance, Natural Resources Defense Council, Appalachian Voices), and private utilities (*e.g.*, Toledo Water, Entergy Services, Xcel Energy d/b/a Public Service of Colorado). In addition to state- and utility-specific work, I engage in national work throughout the United States.

For example, in 2011, I worked with the U.S. Department of Health and Human Services (the federal Low Income Home Energy Association Program, or LIHEAP, office) to create the Home Energy Insecurity Scale and to advance its utilization as an outcomes measurement tool for LIHEAP and other low-income utility bill affordability programs. In 2016, I was part of a team that engaged in a study for the Water Research Foundation on how to reach "hard to reach" customers. In 2020, I completed a study of the affordability of water service in twelve United States cities for the London-based newspaper The Guardian.

Over the course of the past 35 years, I have frequently been involved with the planning, implementation and evaluation of bill assistance programs for low-income households. In the past two years, I have designed a water affordability program for the City of Baltimore and consulted with the California Public Utilities Commission in its consideration of how to address affordability in that state. In 2019, I worked for the Pennsylvania Office of Consumer Advocate in the Pennsylvania Public Utility Commission's ("PUC") generic proceeding reviewing bill affordability programs in that state. In past years, amongst other activities, I was the consultant for the Staff of the New Hampshire PUC in its development of an Electric Assistance Program (EAP); for the Staff of the Maine Public Utilities Commission in that state's design of a fixed-payment PIPP for its electric utilities; for the Maryland Office of Peoples Counsel in that state's

design of its Electric Universal Service Program (EUSP); for the New Jersey Division of Ratepayer Advocate in that state's design of its Universal Service Fund (USF); and for the staff of the Ontario Energy Board in that province's development of its Ontario Electricity Support Program (OESP). I have been retained by the Sierra Club to assist in the development of low-income affordability programs in Virginia pursuant to the Virginia Clean Economy Act (S.B. 851; H.B. 1526), which went into effect on July 1, 2020. I have been retained by the Maryland Office of Peoples Counsel to assist in the development of low-income affordability programs in Maryland pursuant to House Bill 606, An Act Relating to Electricity and Gas Limited-Income Mechanisms and Assistance.

In recent years, I have testified in a variety of jurisdictions with respect to the design, funding and implementation of utility-funded energy efficiency programs. I testified on behalf of Action Centre for Tenants Ontario before the Ontario Energy Board regarding the energy efficiency programs of Ontario Hydro. I have testified before the New Hampshire Public Utilities Commission on at least three occasions regarding the "core" low-income energy efficiency programs funded through that state's System Benefits Charge (SBC). I have testified on multiple occasions before the Michigan Public Service Commission regarding both the natural gas and electric Energy Waste Reduction ("EWR") plans of DTE Energy and Consumers Energy. I have testified on behalf of the Pennsylvania Office of Consumer Advocate regarding the energy efficiency plans of both gas and electric utilities. I testified before the North Carolina Public Utilities Commission regarding Duke Energy's energy efficiency programming.

Aside from my regulatory work, in previous years, I sat on the Board of Directors of the Vermont Energy Investment Corporation ("VEIC") and of Affordable Comfort, Inc. ("ACI"), which at the time was the nation's largest conference on residential energy efficiency. Over the years, I have sat on the National Advisory Committee of the U.S. Department of Health and Human Services, Administration for Children and Families (*i.e.*, the federal LIHEAP office), regarding Performance Goals for Low-Income Home Energy Assistance; sat on the Editorial Advisory Board of the *Public Utility Law Anthology*; sat on the National Advisory Committee of the U.S. Department of Housing and Urban Development, regarding the Calculation of Utility Allowances for Public Housing; and sat on the National Advisory Board of the New York State Energy Research and Development Authority ("NYSERDA"), regarding Energy Financing Alternatives for Subsidized Housing,

After receiving my undergraduate degree in 1975 from Iowa State University, I obtained further training in both law and economics. I received my law degree in 1981 from the University of Florida and I received my Master's Degree in Regulatory Economics from the MacGregor School, Antioch University, in 1993.

I have published three books and more than 80 articles in scholarly and trade journals, primarily on low-income utility and housing issues. I have published an equal number of technical reports for various clients on energy, water, telecommunications and other associated low-income utility

issues. My most recent publication is a chapter in the book "Energy Justice: US and International Perspectives," published by Edward Elgar Publishing in London. My chapter was titled "The equities of efficiency: distributing usage reduction dollars." It offers an objective definition of "equity" based on legal and economic doctrine.

I have not recently testified before the Wisconsin Public Service Commission (my most recent testimony before the Wisconsin PSC having been in 1996 regarding natural gas competition). Over the past 35 years, however, I have testified in more than 300 regulatory proceedings in 43 states and four Canadian provinces.

Appendix B: 2019 Self-Sufficiency Standard
6 Family Compositions: 3-person Family
(shading provided simply to improve readability of Table)

	Adult infant preschooler	Adult preschooler school-age	Adult school-age school-age	2 Adults infant	2 Adults preschooler	2 Adults school-age
Adams County	$45,053	$42,159	$41,381	$41,818	$40,814	$40,169
Ashland County	$48,050	$46,504	$45,309	$44,808	$43,668	$42,070
Barron County	$46,184	$43,444	$41,482	$42,352	$41,742	$40,210
Bayfield County	$49,389	$45,785	$42,782	$46,248	$43,361	$41,275
Brown County	$59,338	$55,815	$53,365	$51,679	$50,598	$48,133
Buffalo County	$52,138	$48,712	$46,405	$47,321	$46,326	$43,097
Burnett County	$49,357	$46,807	$43,399	$44,910	$44,742	$41,001
Calumet County	$56,267	$54,449	$53,076	$48,412	$47,969	$46,665
Chippewa County	$55,659	$53,871	$51,695	$48,190	$48,587	$46,465
Clark County	$46,795	$45,719	$43,480	$42,750	$42,812	$41,334
Columbia County	$58,527	$55,424	$52,800	$51,418	$50,943	$48,302
Crawford County	$55,107	$52,741	$50,902	$47,350	$46,824	$45,052
Dane County	$77,741	$69,243	$64,318	$63,366	$60,679	$55,717
Dodge County	$54,697	$50,910	$48,561	$48,738	$47,296	$45,009
Door County	$56,527	$55,455	$54,264	$50,170	$50,294	$49,096
Douglas County	$51,724	$47,484	$42,701	$47,127	$46,365	$41,738
Dunn County	$52,719	$50,588	$48,524	$46,406	$46,340	$43,489
Eau Claire County	$56,886	$54,409	$52,723	$50,088	$49,290	$47,594
Florence County	$41,775	$41,140	$42,552	$40,928	$39,204	$40,388
Fond du Lac County	$53,092	$51,185	$49,418	$47,435	$47,295	$45,599
Forest County	$50,079	$47,640	$46,201	$45,440	$44,463	$41,792
Grant County	$45,796	$43,941	$44,954	$41,476	$40,097	$40,246
Green County	$55,654	$52,590	$50,394	$48,512	$47,633	$45,503
Green Lake County	$52,575	$50,352	$49,362	$46,867	$45,705	$44,708

Iowa County	$51,634	$50,413	$49,184	$47,138	$47,151	$45,990
Iron County	$49,046	$47,422	$46,698	$45,649	$44,797	$43,179
Jackson County	$48,755	$46,971	$46,653	$45,473	$43,222	$42,658
Jefferson County	$56,665	$52,383	$48,976	$49,832	$48,951	$45,604
Juneau County	$48,892	$46,708	$45,055	$45,594	$45,116	$42,303
Kenosha County	$61,760	$57,483	$54,653	$53,602	$52,150	$49,296
Kewaunee County	$52,014	$51,269	$51,517	$47,313	$46,394	$46,646
La Crosse County	$55,926	$54,223	$53,767	$50,338	$49,084	$48,625
Lafayette County	$46,388	$45,642	$45,026	$41,802	$41,636	$40,816
Langlade County	$45,751	$43,018	$41,659	$41,980	$41,050	$40,021
Lincoln County	$48,345	$47,143	$46,562	$43,520	$42,703	$41,909
Manitowoc County	$50,347	$49,085	$48,043	$45,202	$44,982	$43,068
Marathon County	$53,984	$50,944	$49,381	$48,159	$46,747	$45,175
Marinette County	$45,912	$42,556	$41,723	$42,122	$40,421	$39,720
Marquette County	$48,262	$45,635	$42,159	$45,167	$43,588	$41,154
Menominee County	$40,828	$38,186	$36,572	$39,899	$38,755	$37,102
Milwaukee County	$70,053	$63,556	$60,051	$58,382	$55,364	$51,836
Monroe County	$50,837	$49,315	$48,724	$46,676	$45,739	$45,144
Oconto County	$46,064	$45,076	$43,241	$42,654	$42,296	$41,409
Oneida County	$49,789	$46,918	$45,185	$45,563	$44,455	$41,409
Outagamie County	$57,632	$55,002	$53,486	$50,029	$48,896	$47,375
Ozaukee County	$69,824	$62,939	$58,109	$58,081	$56,017	$51,149
Pepin County	$49,480	$48,177	$48,135	$45,854	$44,586	$44,544
Pierce County	$60,227	$56,848	$54,646	$54,503	$53,315	$51,101
Polk County	$50,734	$49,325	$48,293	$47,068	$46,763	$45,724
Portage County	$54,643	$52,174	$50,572	$48,089	$47,216	$45,679
Price County	$46,702	$41,350	$38,839	$43,391	$41,447	$38,787
Racine County	$60,585	$56,756	$54,813	$52,616	$50,717	$48,761
Richland County	$44,970	$43,593	$45,140	$42,055	$40,881	$41,594
Rock County	$56,280	$53,713	$52,520	$49,092	$47,708	$46,584

Rusk County	$49,037	$46,734	$45,482	$45,220	$43,432	$41,700
St. Croix County	$59,018	$55,530	$53,306	$53,145	$51,867	$49,635
Sauk County	$54,885	$52,909	$51,583	$48,476	$47,829	$46,571
Sawyer County	$47,178	$46,034	$45,753	$44,843	$43,055	$42,605
Shawano County	$45,407	$43,163	$42,578	$41,090	$40,000	$39,668
Sheboygan County	$55,428	$53,637	$52,901	$48,476	$47,410	$46,750
Taylor County	$49,642	$46,163	$41,595	$45,717	$44,967	$40,730
Trempealeau County	$48,669	$47,578	$46,240	$44,440	$44,763	$42,267
Vernon County	$49,709	$48,079	$46,476	$45,368	$45,391	$42,721
Vilas County	$52,225	$52,431	$53,297	$47,667	$47,010	$47,873
Walworth County	$60,790	$54,371	$52,292	$54,379	$50,019	$47,917
Washburn County	$48,425	$46,136	$45,044	$45,212	$43,108	$41,639
Washington County	$63,227	$57,013	$53,324	$54,483	$51,935	$48,228
Waukesha County	$70,507	$64,490	$60,118	$59,391	$57,741	$53,335
Waupaca County	$45,965	$42,301	$40,290	$41,603	$40,788	$38,932
Waushara County	$50,374	$47,289	$43,062	$45,892	$45,904	$41,559
Winnebago County	$58,215	$55,545	$54,420	$50,457	$48,897	$47,770
Wood County	$51,827	$49,595	$47,721	$46,069	$45,703	$42,830

Energy Burden in Milwaukee: Study Reveals Major Disparities & Links to Redlined Areas

Energy burden of households in predominantly Black and Hispanic/Latinx neighborhoods is roughly double that of households in predominantly white neighborhoods.

Energy burden = annual energy utility bills ÷ annual household income

"Energy burden" is the percentage of household income that goes toward energy costs. For example: If your household spends $2,000 annually on energy bills, and your annual household income is $20,000, your energy burden is 10%. High energy burden is considered 6% or more.

> *The average energy burden is 2.1% for majority white neighborhoods, compared to 5.0% for majority Black neighborhoods and 5.3% for majority Hispanic/Latinx neighborhoods.*

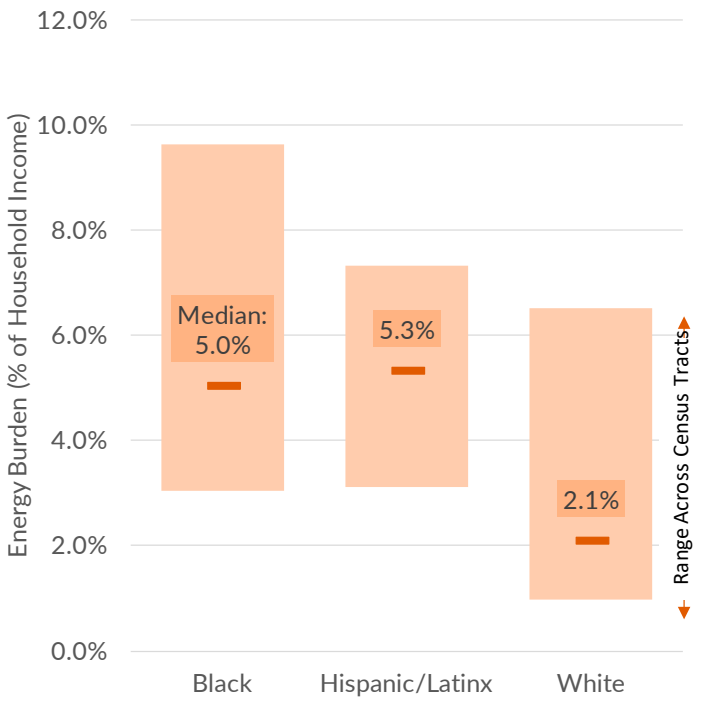
Average energy burden at the neighborhood level doesn't tell the full story, and when you look across individual households the picture is even more stark. According to a **2016 ACEEE report** which references household-level data, one in four Black families in Milwaukee has an energy burden at or above 15.5 percent, while one in four Hispanic/Latinx families has an energy burden of at least 7.9 percent.

HOW MANY PEOPLE EXPERIENCE HIGH ENERGY BURDEN?

85,000 people, or roughly 6% of the Milwaukee metro population, live in high energy burden census tracts with an average energy burden of at least 6%. However, areas with high energy burden are disproportionately Black and Hispanic/Latinx communities. While 16% of Milwaukee's metro population is Black, 65% of residents of high-burden neighborhoods are Black. 11% of the metro area population is Hispanic or Latinx, but 21% of the population in high-burden neighborhoods is Hispanic/Latinx. While the Milwaukee metro area's white population is two thirds of the total population, white residents only account for 9% of the population in high-burden neighborhoods.

Many Milwaukee neighborhoods that were **"redlined"** (discriminatory, race-based home lending restrictions through the mid-1900s), face some of the highest energy burdens in the metro area today. In some Black

Figure 1 Who is Affected

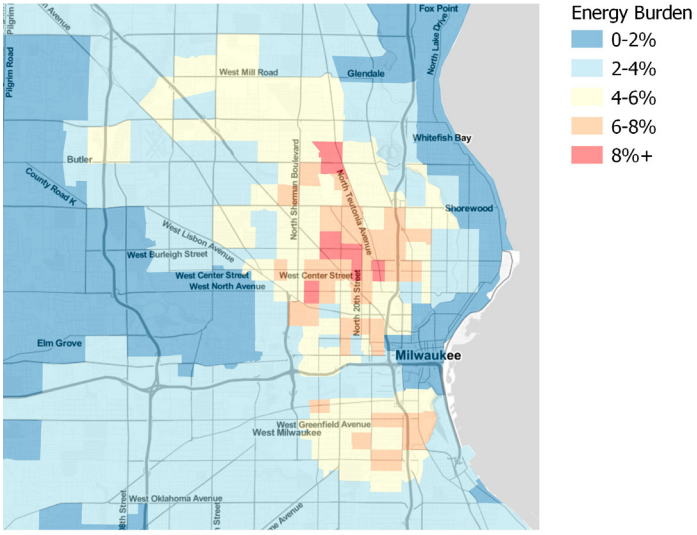


Note on Methodology

For this study analysts examined energy burden in each census tract in the Milwaukee metro area, and categorized each tract based on the racial or ethnic group that accounts for the majority of the population. This approach generalizes a census district by the predominant racial makeup. Since data for this analysis was only available at the census tract level, there are limits to highlighting how each racial group is impacted by energy burden. There are no majority Asian census tracts in Milwaukee, for example, so this approach does not surface the energy burden experienced by Asian households.

However, data maps of Milwaukee may indicate higher energy burdens for other communities of color, based on historically, informally, and systemically segregated neighborhoods. So we would expect that Asian, Indigenous, multi-racial and other identifying groups also experience higher and concerning rates of energy burden if they tend to live in these higher burden tracts/neighborhoods.

Figure 2 Energy Burden by Census Tract



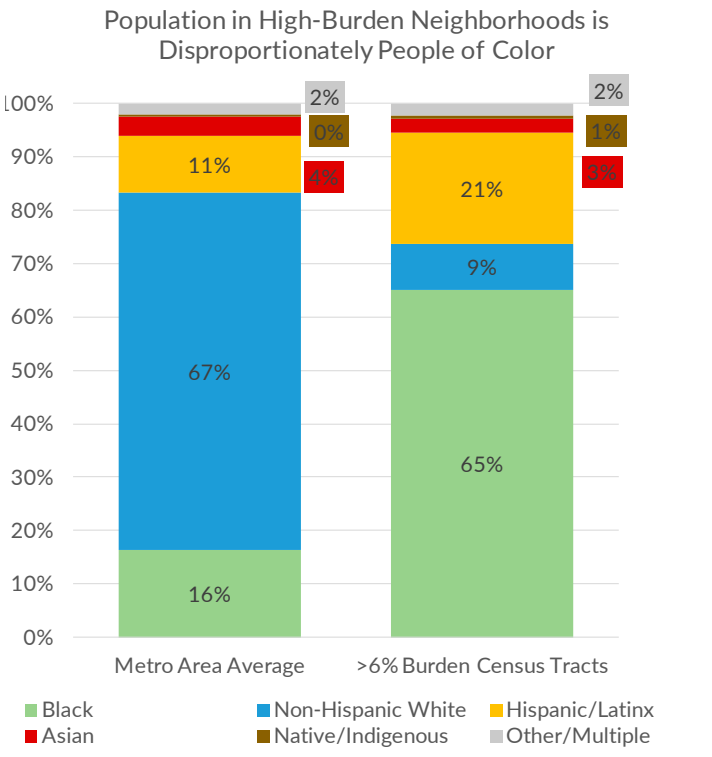
and Hispanic/Latinx neighborhoods, the average household spends as much as 7-10% of household income on energy bills, and households below 1.5 times the Federal Poverty Line spend as much as 15-20% of their income on energy bills.

WHY WE SHOULD CARE: EQUITY

Energy in the form of electricity and heating is necessary to survive and prosper today, especially in Wisconsin's climate. We need it for lighting, food storage, cooking and cleaning, communications, education, and heating and cooling. Yet the burden of paying for this basic necessity puts some people at risk - a risk that in Milwaukee is especially borne by many Black, Indigenous and People of Color (BIPOC) families, and adds to other already existing disparities.

High energy burdens can threaten a household's ability to pay for energy - risking disconnections, and forcing tough choices between paying energy bills and buying food, covering rent or mortgage payments, obtaining medical treatment and medicine, and accessing other

Figure 3



Real impacts: Nikki, North Side resident

Nikki is a full-time nursing student who lives with her 4 year old great-nephew in a 2-bedroom apartment on Milwaukee's North Side. She also provides care and support for her mother who lives downstairs in her own apartment in the same duplex. Nikki has been on a rollercoaster of intensely high bills from We Energies and while she uses fewer appliances and uses them less often than her mother does downstairs, her mothers' bills are much lower and more stable. "I want to know why my bill is so high. I'm not using that much for my bill to be as high as it is. It's always $300 or more each month."

Nikki's mother applied for an energy audit through a local organization, and the inspector also viewed Nikki's living space. The inspector told them that there's no insulation in the home, so when the temperatures fluctuate, the heat costs jump up. The inspector planned to inform the landlords, who live out of state, that they could insulate the house for free if they give their approval, but Nikki hasn't heard whether there was follow up.

"All I want to know is where is the problem in my energy usage. My bill says one thing and I'm not understanding what this high amount is because I feel like I'm not using what they're saying I'm using." Nikki hasn't asked We Energies about her usage because she feels that they would not tell her the truth. "They are making a lot of money off of people. They might just blame me and tell me to unplug things when I leave. I do all that."

Nikki says that people she knows don't trust We Energies, and that the company needs to begin developing good rapport especially in the inner city community. She said this kind of issue wouldn't happen in the suburbs because people there have a less stressful lifestyle and better living conditions - and even if they have high energy bills, they can probably afford them.

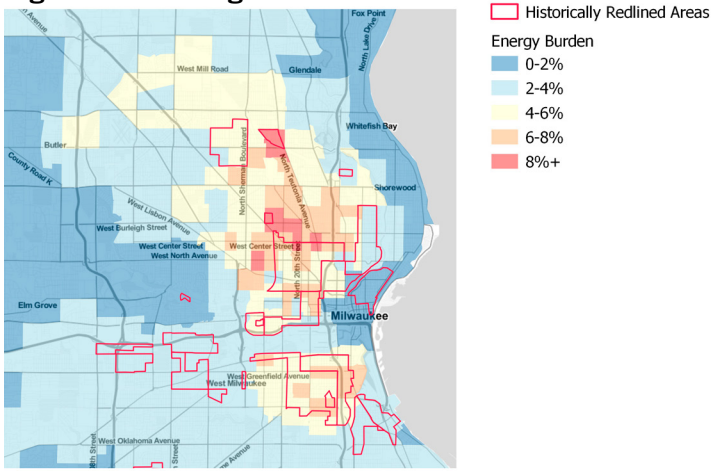
Nikki calls upon politicians and other local leaders to be part of the solution. "I really think that a lot of people that are in positions to help, are not helping. We the people can say, 'you really need to give me a reason to vote for you.' I want to know that you're for the cause and you don't want to be part of the problem - you want to fix it. After not seeing change in your community, you pretty much give up hope."

essentials. Households with high energy burdens experience many negative long-term effects on health and well-being including a greater risk for respiratory diseases and increased stress.

Specific factors impacting overall energy burdens include the energy efficiency of the home, appliances and lighting, along with the amount of use, number of people, and income level. Factors influencing the ability to mitigate energy use include ownership of the residence, cost of efficiency upgrades and awareness about and availability of support programs.

Systemic racism, such as the legacy of racist housing policies, and job and income discrimination, contributes to more BIPOC families living in inefficient homes and having higher energy costs than white families, which forces these families to make trade offs between utility payments and other necessities, and to navigate

Figure 4 Redlining in Milwaukee



even more cumbersome and disenfranchising system hurdles. Meanwhile, energy efficiency improvements to alleviate the cost burdens are largely inaccessible to low-income families, and awareness of programs is often low. In addition, the high energy use contributes to

Real impacts: Lady T, South Side resident

Lady T and her family of 6 have had an especially grueling year amidst the difficulties of the COVID-19 pandemic. In August, they found out that a resident in their building had illegally routed electricity to an attic, and the city of Milwaukee quickly condemned the property, boarded it up, and put their belongings out on the grass. When Lady T, her boyfriend, and their four school-aged children were finally able to move into housing again, they were met with a large utility bill from We Energies. At that time, they were just getting reestablished, and had to pay multiple rental application processing fees and juggle a lot of expenses. How were they going to pay $500 up front to We Energies? Thankfully they were able to apply for energy assistance through a community organization, and within a few weeks, after various paperwork and eligibility hurdles, the balance was paid.

This isn't the first time that Lady T has been mistreated by We Energies, though. A few years ago, the family fell behind on utility payments and their energy was cut off for about two weeks. Lady T had unexpectedly lost a job after seven years with the company and was pregnant at the time. We Energies demanded what they call a "down payment" of about $600 that she couldn't pay, and then disconnected the electricity. "We don't have another company to choose from for electric or gas service, and they [We Energies] can be very mean. People do have real life situations that they can't control; circumstances where they can't pay. I won't live that again." Lady T was lighting candles, and an upstairs neighbor ran a cord down to the apartment so they could have a small refrigerator. "The kids couldn't believe what was happening. We never experienced that before. It was such a shock that the lights were gone. Two of my young children now need daily breathing treatments on a machine we have to plug in. What do people do?"

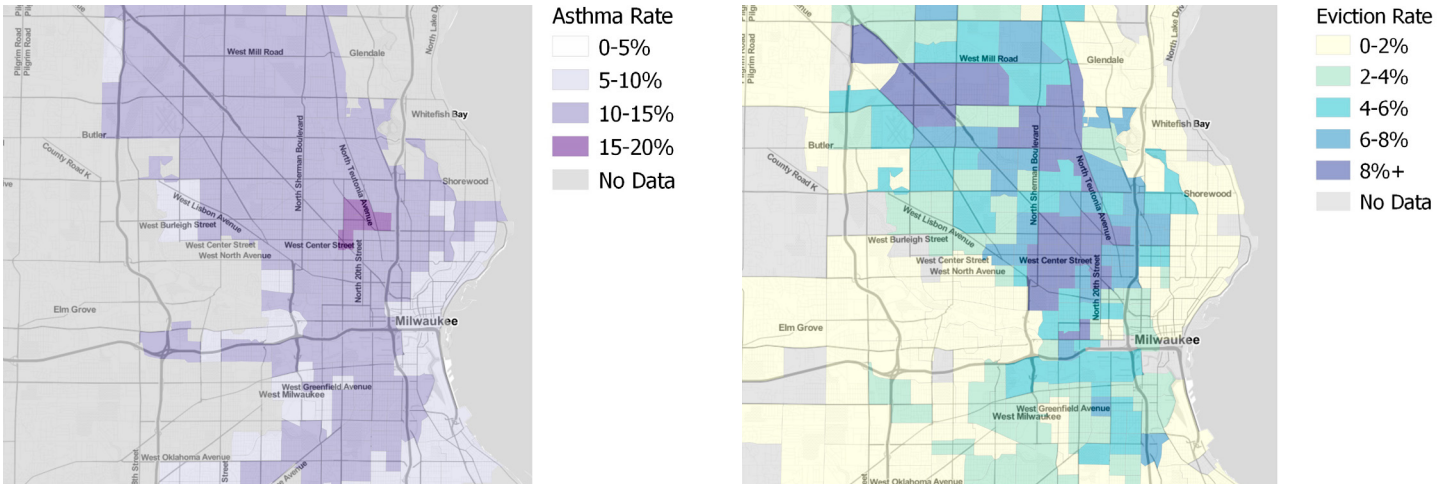
Lady T asks that, given the pandemic, We Energies cease the down payments and let people catch up and pay their monthly amount. There is funding that could go to the utility to cover the down payments, she says. "People who have walked this walk, lost their job, can't work, lost income, quit jobs because of virtual learning - for whatever reason - it causes a domino effect. What do you expect them to do? Think of the actual people and what they're living. We Energies isn't looking at people's income situation. They don't understand. Really empathize - It would help people and give people hope. When I got the energy assistance, I felt so good with that burden off my back. That feeling of cutting people off, or threatening with the high, up-front payment - no one should feel that feeling."

carbon emissions, climate change, and more pollution from burning fossil fuels to create electricity. BIPOC communities disproportionately suffer the impacts of these pollution and climate impacts.

In Milwaukee, we see that higher energy burdens disproportionately impact predominantly Black and Latinx/Hispanic and lower-income neighborhoods. Some contributing factors are the history of discriminatory housing policy (redlining), racial segregation and differences in quality of housing stock in Milwaukee. In the discussion about clean energy and affordable housing in America, what often gets left out of the conversation are the ways in which energy insecurity and racist housing practices intersect. The long, shameful history of discriminatory housing policies and racial segregation in our country is part of the reason why BIPOC families are more likely to live in older, energy-inefficient homes that burden them with higher energy costs.

Many of Milwaukee's Hispanic and Latinx residents are newer to the city and sometimes new to the country. Many immigrants or children of immigrants

Figure 5 Milwaukee Asthma Rate, Milwaukee Eviction Rate



do not have access to historical wealth like established white American families do, making it more likely for immigrant families to rent their homes instead of purchasing them. People new to the United States also have no credit history, which adds another obstacle to purchasing a house, forcing many new residents to be dependent on the housing conditions provided to them by their landlords. As a result, many of Milwaukee's Latinx and Hispanic residents, as well as other immigrant families, reside in homes without efficient energy saving technology, and see much higher rates of energy burden compared to white Milwaukee households. For residents who are undocumented and particularly vulnerable, there are often barriers to supports like energy assistance, and risks in navigating services and programs, as well.

Looking at the racial equity gap in the United States, we see that children who live in households with a high energy burden (disproportionately children of color) are more likely to experience food insecurity, hospitalizations, poor schools, disruptions in their lives, and developmental delays compared to children in energy secure homes. These impacts carry on through their lives and perpetuate racial disparities in this country - something often clearly evidenced in communities such as Milwaukee, with racial and generational poverty and health impacts.

HOW CAN MILWAUKEE ADDRESS ENERGY BURDEN DISPARITIES?

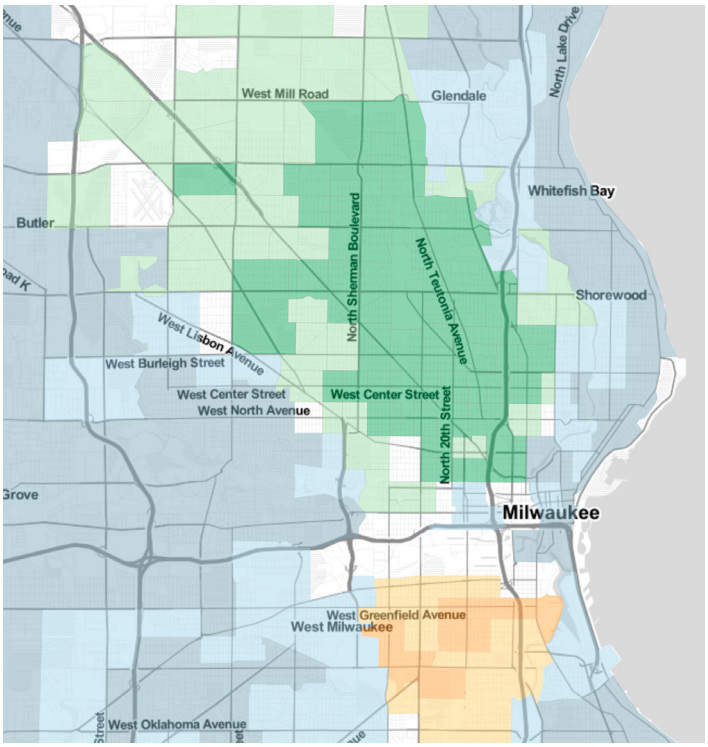
Addressing the energy burden issue requires a cooperative approach among public and private sector decision makers, led by those most impacted to address their direct needs and concerns.

Increasing investments in energy efficiency and affordability programs and targeting these initiatives to the

Table: Energy Expenditures and Incomes in High-Burden Neighborhoods

	High Burden Census Tracts (>6% Burden)	All Other Census Tracts (<6% Burden)
Average Energy Expenditure ($)	$2,240	$1,930
Average Household Income ($)	$32,000	$80,000

Figure 6 Milwaukee Demographics



communities that experience high energy burden as laid out in this report, is an important and necessary way to address the clear disparities. These programs can help reduce high energy burdens, make energy bills more affordable, and improve health disparities worsened by COVID-19. There are opportunities to work with utilities, local and state governments, and the Public Service Commission of Wisconsin to set energy affordability goals and track outcomes while identifying and targeting impacted communities for programs to serve.

In addition to affordable energy, resolving racial disparities will also require attention to other underlying issues such as income disparities, transportation access, providing good healthcare, education, community support, COVID-19 recovery initiatives, and addressing discriminatory racial policies and practices.

Real impacts: César, South Side resident

César lives with their parents and grandmother in Milwaukee's Walker Square neighborhood. Recently, César's father received a bill from We Energies for $4100 - much of it had accumulated over the colder months of this past winter. When their father called We Energies about the bill, he was told that he must pay $1000 immediately in order to get on a $250/month payment plan - César says that is not doable right now. The family has been struggling to make ends meet and cannot afford these payments. "My dad spoke with someone at the collections agency who told him he had a week to pay the $1000 or they were going to cut off power, which would be before the legally allowed timeline of April 15th."

César tried helping their dad by calling We Energies but spent a lot of time on hold, got transferred to collections, then patched to supervisors, and never received return calls after they left messages. "I honestly just got frustrated at that point and I gave up. They want people to give up. If they wanted to they could have spoken with me several times, but they don't. They don't actually care about the people."

The family recently recovered from COVID-19 and received assistance from a local COVID relief fund for immigrants, but they are not eligible to apply again. They don't know what else to do. Knowing that We Energies can disconnect the power on April 15th, César says the best they can do is try to get the money together, though they're doubtful that they will be able to by then. They say they may have to cut other things like cell phone and internet services, even though they all need it so they can coordinate transportation to jobs.

The way our utilities operate and bill customers can also make a big difference. Currently, residential customers pay high utility fixed fees for electricity and gas, resulting in disproportionately high energy bills for

many BIPOC and other low income customers. These fee structures need to be changed to increase equity, including eliminating high reconnection fees that result in keeping people behind on their bills, especially as low-income residents only begin to face the long road of economic recovery from the COVID-19 pandemic.

The transition to affordable clean energy sources reduces costs to customers and reduces pollution, as well. Latest reported figures show that We Energies' fleet in Wisconsin operates on 73% dirty, harmful fossil fuels, with its largest plant burning 5.9 million tons of coal each year (nearly 60,000 railcars) just south of Milwaukee. We Energies' parent company, WEC Energy Group's Executive Chair skeptically referred to President Biden's goal of a carbon-free power sector by 2035 as a "moonshot," and stated his intentions to run the Oak Creek coal plant "through mid-century." WEC needs five-to-ten times as much clean energy as they have now to address the climate crisis which disproportionately harms communities of color, and to save lower-income customers money.

> *The **2020 ACEEE scorecard** ranked We Energies as 23rd in energy efficiency among the country's 52 largest utilities.*

If Milwaukee is to address its racial disparities through equitable means, dealing with undue and discriminatory energy burdens must be part of it. There are many facets and underlying issues that are a part of this problem, but there are steps that can and must be taken on a number of fronts to provide a safe and welcoming environment for all to thrive. It is being done elsewhere, and Wisconsin and Milwaukee can do the same.

Email us for more information and ways to get involved in advocacy efforts at **wisconsin.chapter@sierraclub.org**

Methodology: Analysts referenced census tract level energy burden data from the US Department of Energy's (DOE) Low Income Energy Affordability Data (LEAD) Tool which they've combined with Census American Community Survey data on race by census tract. Analysts applied a population-weighted average, considering that while most census tracts are a similar size, there are some large ones that can shift the rankings.

Data Sources:

- *Energy Burden - DOE Low Income Energy Affordability Data Tool*
- *Racial Demographics - Census American Community Survey 2018*
- *Asthma Rate - CDC 500 Cities Database*
- *Eviction Rate - EvictionLab*
- *Redlining - University of Richmond Mapping Inequality Project*

ACE ALLIANCE FOR CLIMATE EDUCATION · BLOC Black Leaders Organizing for COMMUNITIES · CITIZEN ACTION OF WISCONSIN · NORTH SIDE RISING · VOCES DE LA FRONTERA · SIERRA CLUB WISCONSIN CHAPTER

APPENDIX

Figure 1 Who is Affected

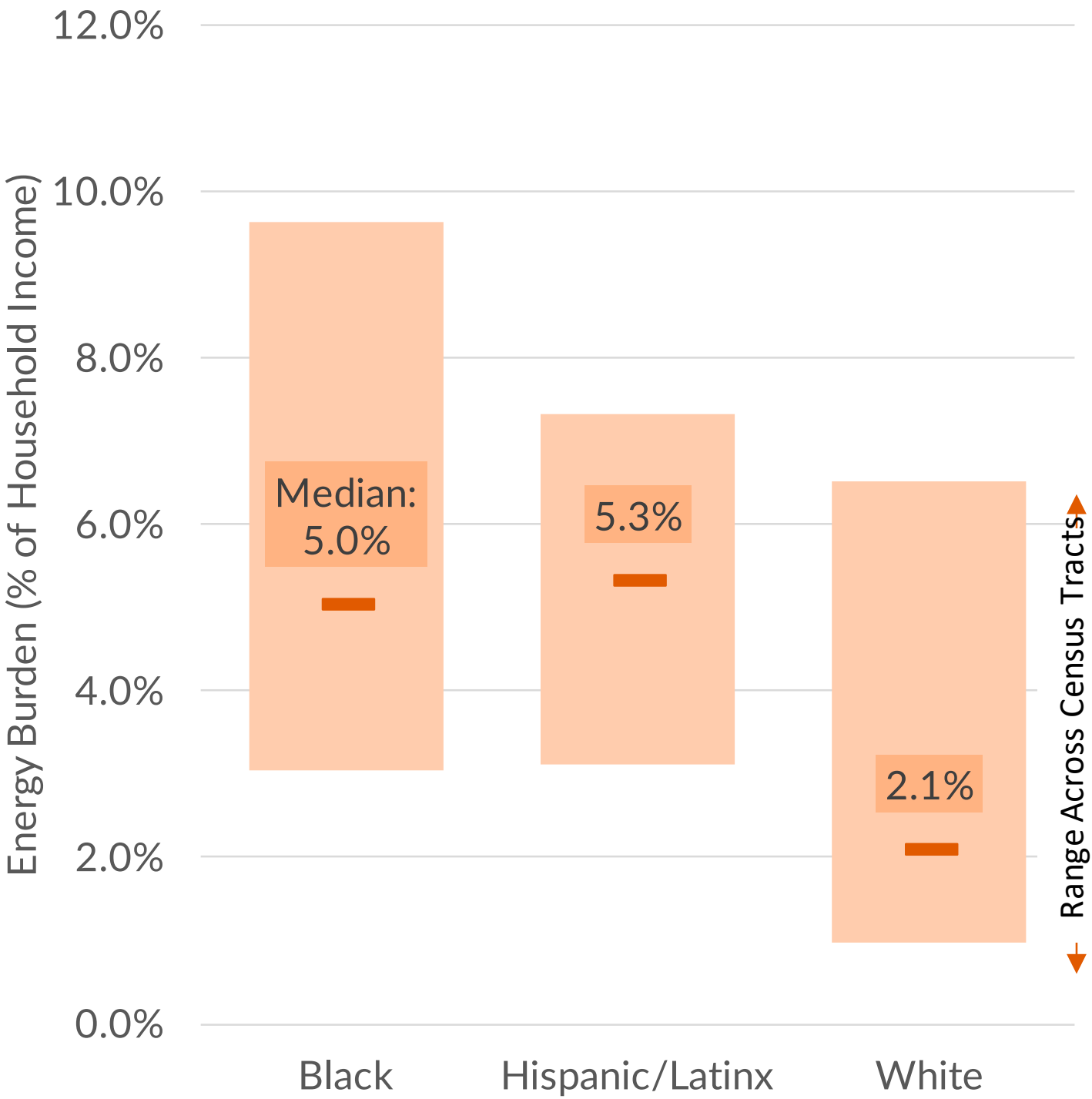


Figure 2 Energy Burden by Census Tract

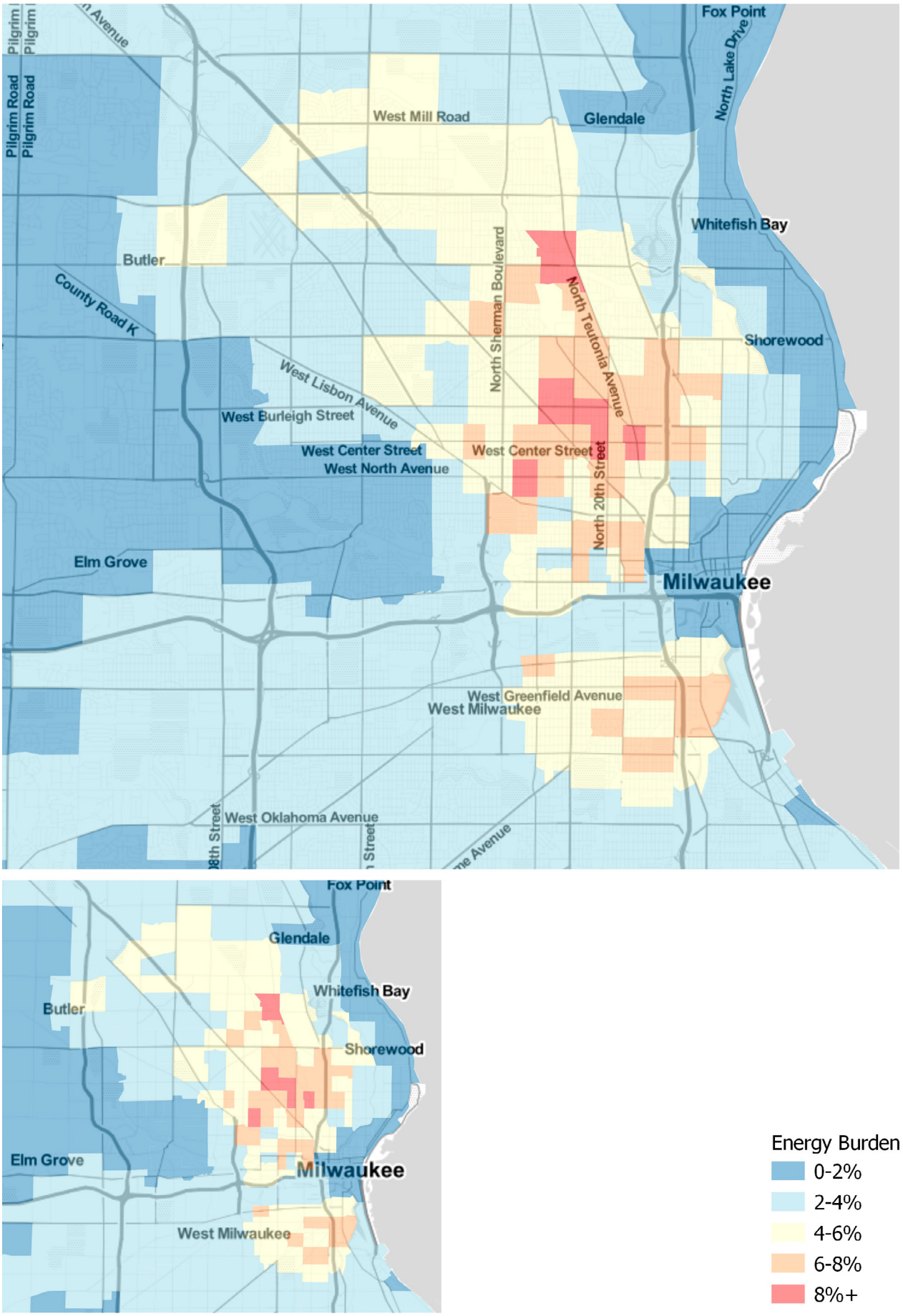


Figure 3

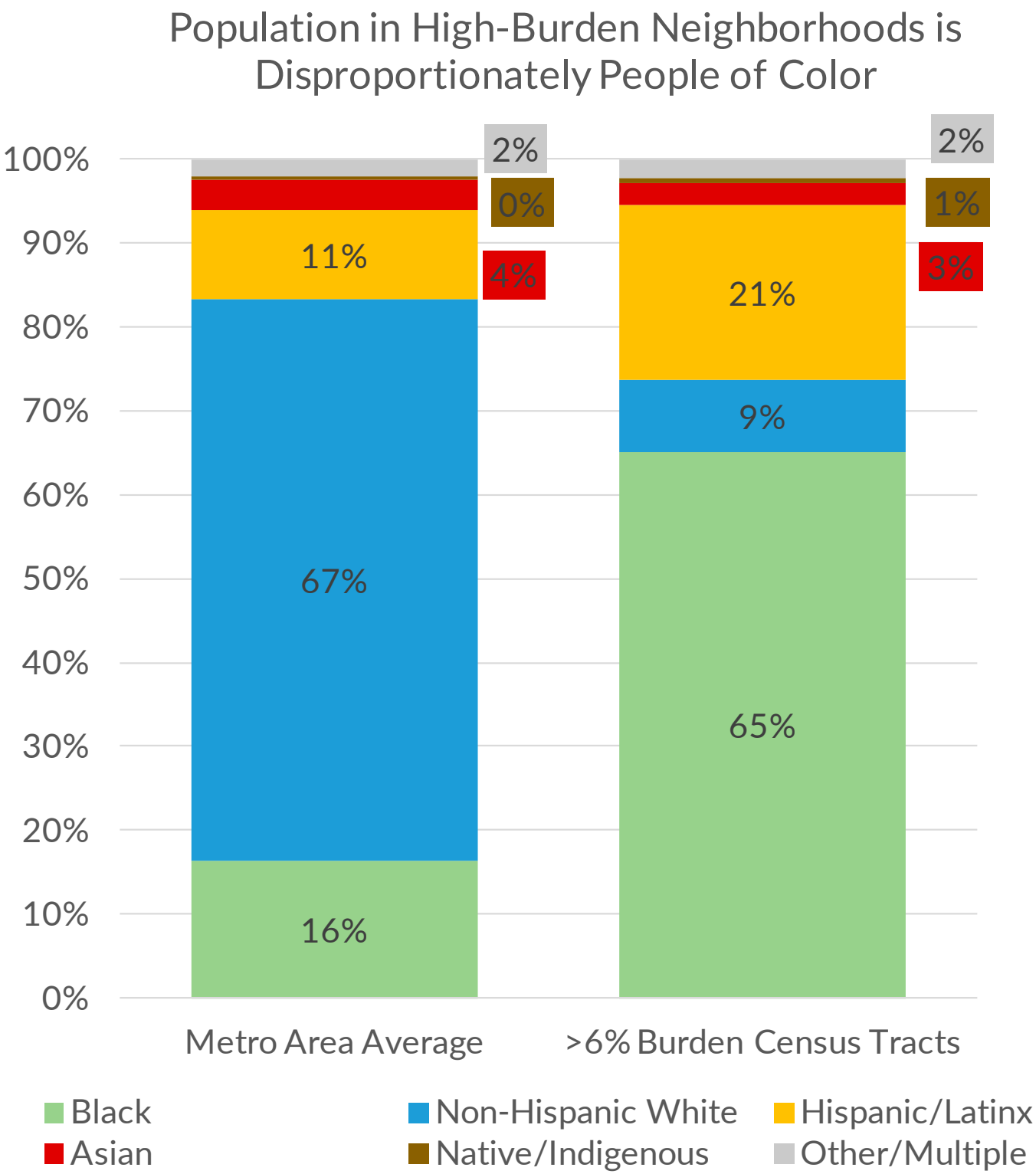

Population in High-Burden Neighborhoods is Disproportionately People of Color
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
2%
0%
11%
4%
67%
16%
2%
1%
21%
3%
9%
65%
Metro Area Average
>6% Burden Census Tracts
Black
Non-Hispanic White
Hispanic/Latinx
Asian
Native/Indigenous
Other/Multiple

Figure 4 Redlining in Milwaukee

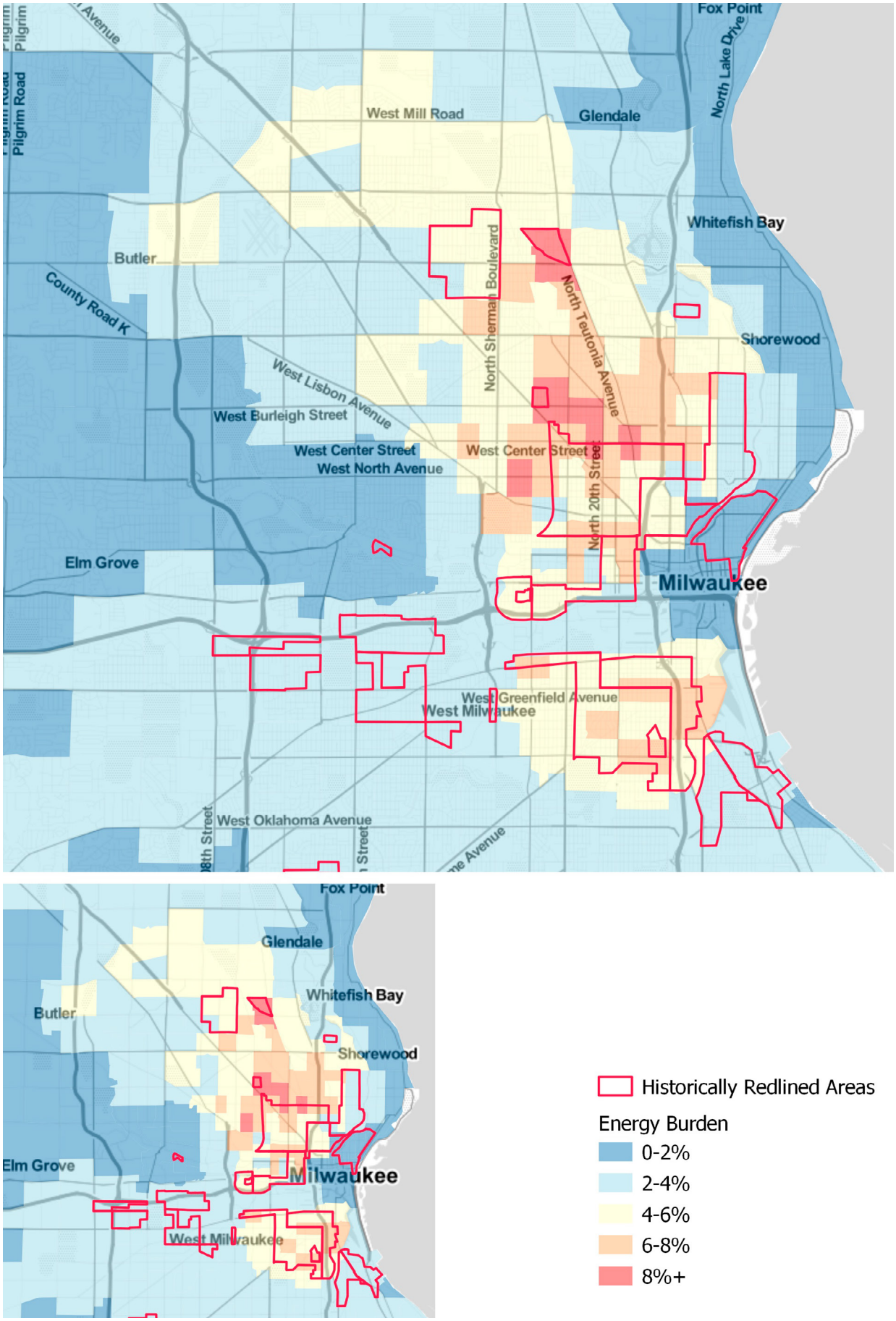
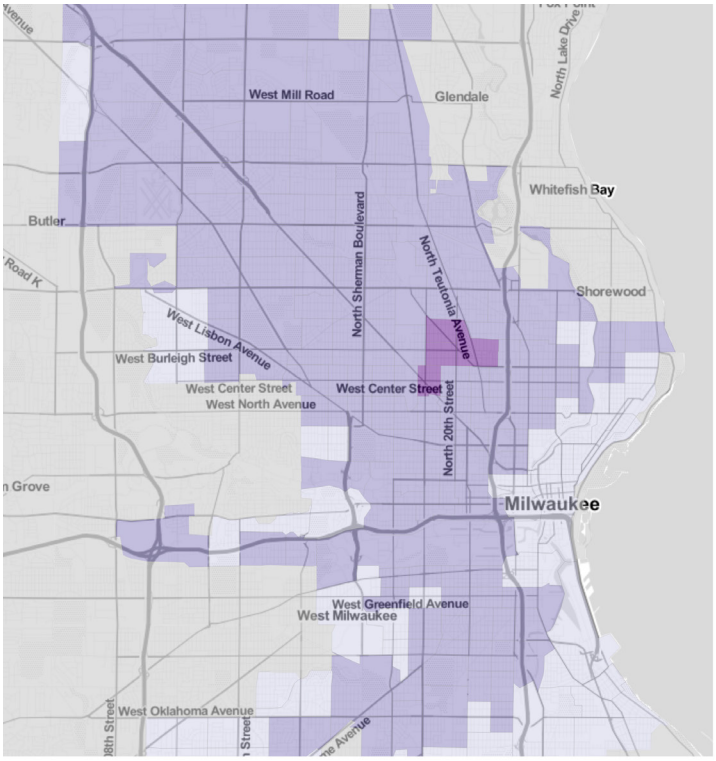
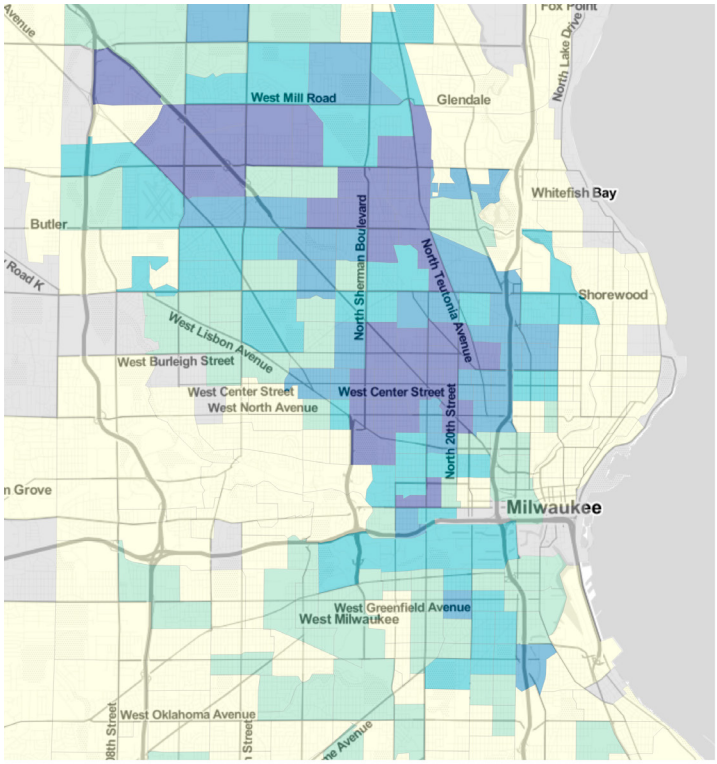
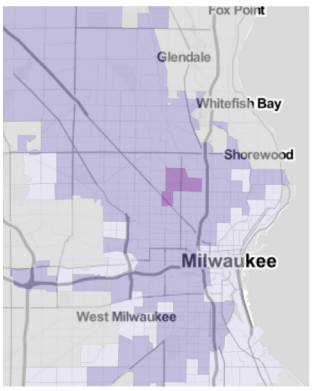


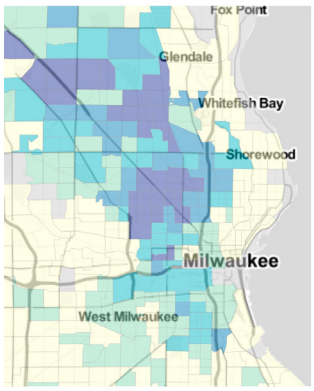
Figure 5 Milwaukee Asthma Rate, Milwaukee Eviction Rate





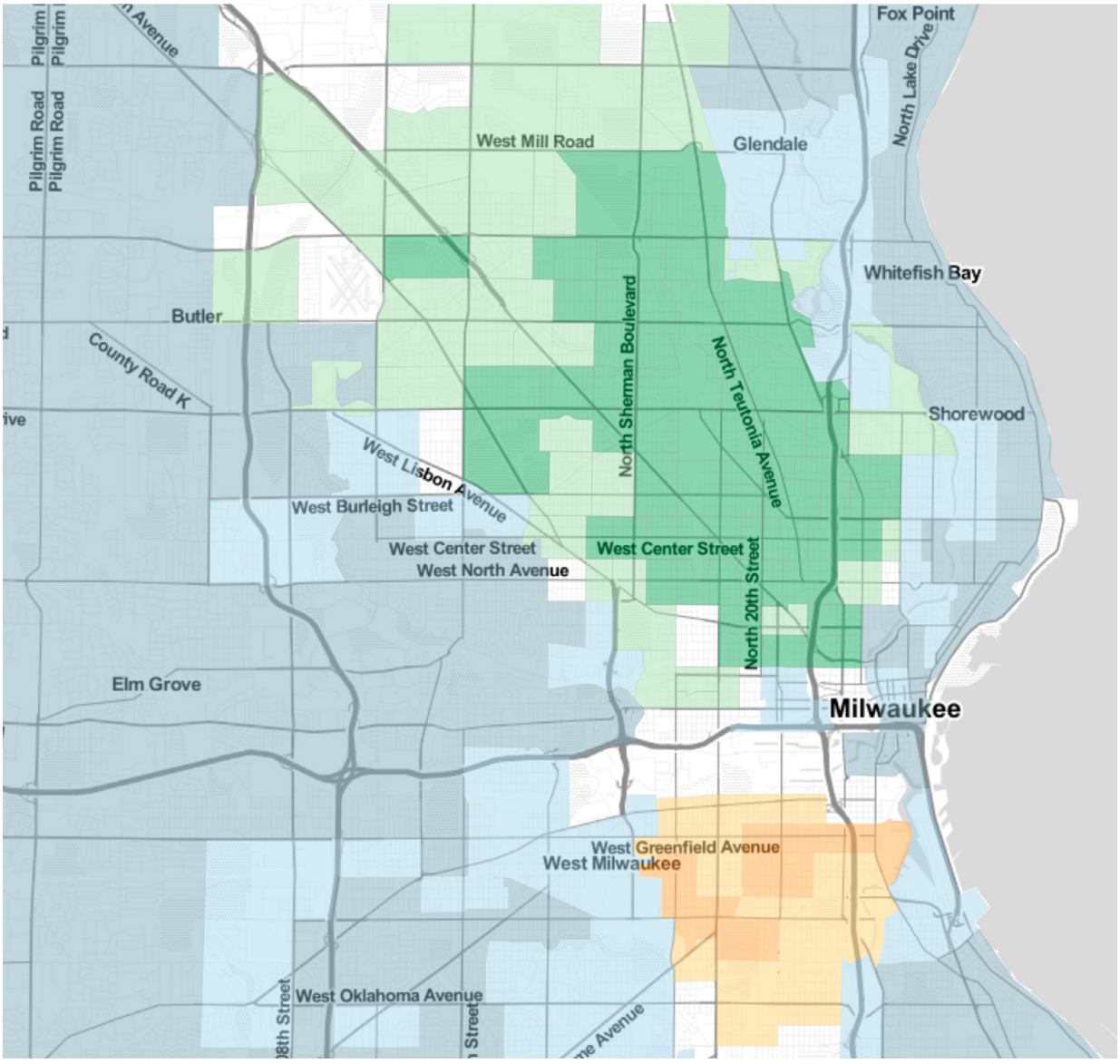


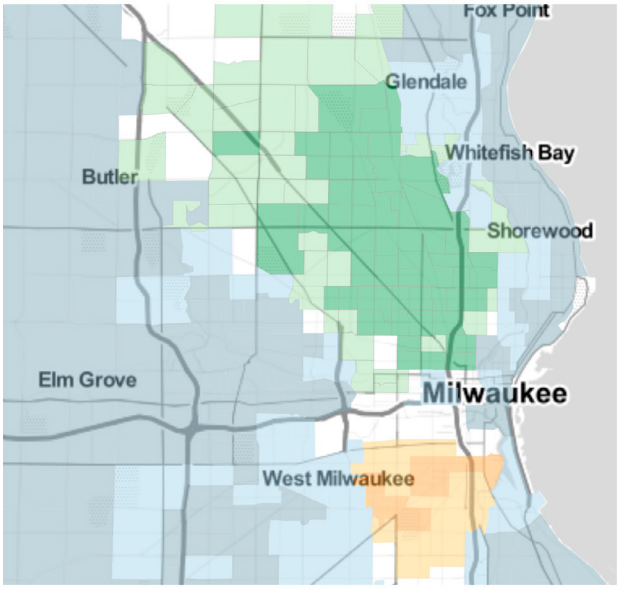
Asthma Rate
- 0-5%
- 5-10%
- 10-15%
- 15-20%
- No Data



Eviction Rate
- 0-2%
- 2-4%
- 4-6%
- 6-8%
- 8%+
- No Data

Figure 6 Milwaukee Demographics





Majority Demographic
- Black Majority: 50-75%
- Black Majority: 75-100%
- White Majority: 50-75%
- White Majority: 75-100%
- Hispanic/Latinx Majority: 50-75%
- Hispanic/Latinx Majority: 75-100%

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Appendix E

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **CONSUMERS ENERGY COMPANY** to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016.	)))))))	Case No. U-20875

At the March 17, 2022 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Daniel C. Scripps, Chair
Hon. Tremaine L. Phillips, Commissioner
Hon. Katherine L. Peretick, Commissioner

ORDER APPROVING SETTLEMENT AGREEMENT

On August 2, 2021, Consumers Energy Company (Consumers) filed an application, with supporting testimony and exhibits, requesting approval of its energy waste reduction plan for 2022 through 2025 and other related relief.

A prehearing conference was held on September 8, 2021, before Administrative Law Judge Sharon L. Feldman (ALJ). At the prehearing conference, the ALJ granted the petitions to intervene filed by the Natural Resources Defense Council, the National Housing Trust, the Ecology Center, the Sierra Club, and the Association of Businesses Advocating Tariff Equity. Additionally, the ALJ recognized the intervention status of the Michigan Department of Attorney General. Consumers and the Commission Staff also participated in the proceeding. Subsequently, the parties submitted a settlement agreement resolving all issues in the case.

The Commission has reviewed the settlement agreement and finds that the public interest is adequately represented by the parties who entered into the settlement agreement. The Commission further finds that the settlement agreement is in the public interest, represents a fair and reasonable resolution of the proceeding, and should be approved.

THEREFORE, IT IS ORDERED that:

A. The settlement agreement, attached as Exhibit A, is approved.

B. Within 30 days of the issuance of this order, Consumers Energy Company shall file tariff sheets substantially similar to those attached to the settlement agreement.

The Commission reserves jurisdiction and may issue further orders as necessary.

Any party desiring to appeal this order must do so in the appropriate court within 30 days after issuance and notice of this order, pursuant to MCL 462.26. To comply with the Michigan Rules of Court's requirement to notify the Commission of an appeal, appellants shall send required notices to both the Commission's Executive Secretary and to the Commission's Legal Counsel. Electronic notifications should be sent to the Executive Secretary at mpscedockets@michigan.gov and to the Michigan Department of the Attorney General – Public Service Division at pungp1@michigan.gov. In lieu of electronic submissions, paper copies of such notifications may be sent to the Executive Secretary and the Attorney General – Public Service Division at 7109 W. Saginaw Hwy., Lansing, MI 48917.

MICHIGAN PUBLIC SERVICE COMMISSION

Daniel C. Scripps, Chair

Tremaine L. Phillips, Commissioner

Katherine L. Peretick, Commissioner

By its action of March 17, 2022.

Lisa Felice, Executive Secretary

EXHIBIT A

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **CONSUMERS ENERGY COMPANY** to fully comply with Public Act 295 of 2008, as amended by Public Act 342 of 2016	)	Case No. U-20875

SETTLEMENT AGREEMENT

Pursuant to MCL 24.278 and Rule 431 of the Michigan Public Service Commission's ("MPSC" or the "Commission") Rules of Practice and Procedure, the undersigned parties agree as follows:

WHEREAS, on August 2, 2021, Consumers Energy Company ("Consumers Energy" or the "Company") filed an Application with supporting testimony and exhibits requesting approval of its 2022-2025 Energy Waste Reduction ("EWR") Plan pursuant to 2008 PA 295, as amended by 2016 PA 342, MCL 460.1001 et seq. ("Act 295"), and as directed by the MPSC.

WHEREAS, the initial prehearing conference in this proceeding was held on September 8, 2021. The parties to the case are Consumers Energy, the Commission Staff, the Natural Resources Defense Council ("NRDC"), National Housing Trust ("NHT"), the Ecology Center, Sierra Club, the Association of Businesses Advocating Tariff Equity ("ABATE"), and the Department of Attorney General.

NOW THEREFORE, for purposes of settlement of Case No. U-20875, the undersigned parties agree as follows:

1. The parties agree that the Company's filed 2022-2025 EWR Plan should be approved as modified in this Settlement Agreement.

2. The parties agree that Consumers Energy will recover the electric and natural gas EWR Plan costs via the surcharges set forth on Attachment A to this Settlement Agreement. These EWR surcharges are the levelized surcharges for each customer class. The full surcharges (the sum of the approved plan component plus the approved performance incentive component) are set forth on Attachment A. The surcharges set forth on Attachment A are based on an assumed implementation in April 2022 customer bills. If the surcharges are implemented in May 2022 or later, they would have to be modified accordingly. The parties also agree, beginning in 2023, to recover electric business EWR Plan costs via the ten-tier surcharge structure, inclusive of both primary and secondary customers, provided in Attachment A.

3. The parties agree that, per the filed plan, the energy savings targets for the Company will be based on the prior year weather-normalized sales methodology and will include a downward adjustment in gas energy savings targets to remove gas sales to electric generation customers. Subject to audit results, the natural gas targets for 2022, 2023, 2024, and 2025 are 2,130,573 Mcf, 2,134,856 Mcf, 2,135,389 Mcf, and 2,137,370 Mcf, respectively, as shown in Attachment D.

4. The parties agree that Consumers Energy should be granted MPSC approval to continue the accounting practices previously authorized by the Commission in its approval of the Company's original Energy Optimization Plan, and the authority to roll-over any unused funds into the next plan year funding. Unused funds are to be rolled over and remain within the class to which they were allocated.

5. The Company shall continue to analyze and demonstrate the cost effectiveness level of each individual EWR program in its annual reconciliation proceedings throughout the Plan period.

6. The parties agree the Company can invest in its EWR portfolio up to the levels outlined in Attachment D of this Settlement Agreement and that the Company should be granted authority to continue to reallocate up to 30% of the overall EWR budget by and within each class to ensure program flexibility for the more popular programs. With the exception of the multifamily program administered as part of the business class, which will not have such reallocation flexibility, reallocation will occur within the same service class. This reallocation was approved in Case Nos. U-16412, U-16670, U-17351, U-17771, U-18261, and U-20372 and is authorized by Section 71(4)(h) of Public Act 342 of 2016. To help ensure continuity of the EWR program portfolio in the market and delivery of the increased energy savings targets, if cost effective, the Company may also increase annual investment above the annual amounts in Attachment D by up to 6% of electric and 10% of gas investment.

7. *Electric Income Qualified Investment.* As identified in Attachment D, the Company agrees to the following Income Qualified Program electric investment levels.

a. *Single family.* $9.6 million in 2022 and 2023, $10.6 million in 2024, and $11.0 million in 2025. This includes incremental investment to the Company's EWR Plan as filed of $2.0 million in 2022, $1.7 million in 2023, $2.7 million in 2024, and $2.8 million 2025.

b. *Multifamily.* $9.4 million in 2022, $10.7 million in 2023, $11.8 million in 2024, and $12.6 million in 2025. This includes incremental investment to the Company's EWR Plan as filed of $0.7 million in 2022, $2.1 million in 2023, $3.3 million in 2024, and $4.1 million in 2025.

8. *Gas Income Qualified (IQ) Investment.* As identified in Attachment D, the Company agrees to as the following Income Qualified Program gas investment levels.

a. *Single family.* $15.75 million in 2022, $17.5 million in 2023, $20 million in 2024, and $22 million in 2025. This includes incremental investment to the Company's EWR Plan as filed of $1.8 million in 2022, $3.5 million in 2023, $5.9 million in 2024, and $7.8 million in 2025.

b. *Multifamily*. $7.8 million in 2022, $9 million in 2023, $10.5 million in 2024, and $10.5 million in 2025. This includes incremental investment to the Company's EWR Plan as filed of $3.7 million in 2022, $4.9 million in 2023, $6.4 million in 2024, and $6.4 million in 2025.

c. The parties agree that the Income Qualified program gas incremental investment noted above shall not be directed toward non-emergency new gas equipment (furnaces, boilers, water heaters) beyond what is already included in the Company's EWR Plan as filed. This does not apply to emergency gas equipment replacements where the existing equipment has failed, is at end of life, or other health and safety replacement reasons, nor to any non-gas-fired equipment measures.

9. *Net-to Gross.* The parties agree that the Net-to-Gross ("NTG") of 0.92 will apply for most programs and 1.00 will apply for the Income Qualified program. The Company will apply a 0.4 NTG ratio for Standard and 0.5 for Specialty (such as candelabra and globe) LEDs in 2022 and 0.35 NTG for Standard and 0.44 for Specialty LEDs in 2023. Any updated or adjusted NTG values for lighting for program years 2024 and 2025 will be included in the Company's next EWR Plan filing.

10. *Supplier Diversity*. Consumers Energy will continue its practice of providing an opportunity for non-profit organizations, Michigan-based business enterprises, and minority,

women, veteran, service-disabled veteran, and LGBT+–owned diverse business enterprises to compete on an equal basis for materials and services utilized by the Company in connection with implementing its EWR Plan. This practice does not diminish, in any way, the objective of Consumers Energy to acquire materials and services on the most economic basis available, considering factors such as price, quality, service reliability, and timely delivery, and encouraging all qualified suppliers and contractors to compete for the Company's business. Consumers Energy agrees to consider non-profit organizations or businesses that have demonstrated experience serving the affordable Multifamily sector and have responded to a request for proposal related to the Company's Income Qualified Multifamily program. Consumers Energy agrees to track and report in EWR annual reconciliations the number of such organizations and business enterprises utilized by the Company in connection with implementing its EWR Plan. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

11. *Performance Incentive.* The parties agree that the metrics associated with the Performance Incentive Mechanism ("PIM") for both the electric and gas programs are provided on Attachment C of this Settlement Agreement. The metrics under the PIM will continue to be based upon both lifetime savings targets and supplemental metrics, and eligibility of the financial incentive is determined first by demonstrating achievement of the annual incremental energy savings thresholds established in Section 75 of Act 295, as amended by Public Act 342 of 2016. MCL 460.1075. The parties are not prohibited from proposing changes to the PIM in future EWR proceedings.

12. *Home Energy Reports.* The parties agree that energy savings from the Company's residential Home Energy Report Program will not account for more than 20% of the total residential electric savings and 15% of the total residential gas savings in 2022 and 2023.

13. *All-Electric Home Pilot.* Consumers Energy agrees to continue its Super-Efficient, All-Electric New Construction Pilot designed to help identify additional residential electric savings opportunities from this sector. The number of homes to be included in the pilot will be of sufficient quantity to demonstrate success with multi-unit production at reasonable cost rather than just a limited number of expensive, custom homes. The pilot will include (a) at least net zero ready but can be net zero photovoltaic (PV) added; (b) cold climate heat pumps; (c) monitoring and evaluation of factors such as energy bill impacts, heat pump performance, customer comfort, builder barriers, and cost-effectiveness; and (d) documentation of results through case studies. The pilot will include promotion of healthy building materials as described in paragraph 19. The Company agrees to include pilot reporting in the annual EWR report.

14. *Multifamily One-Stop Shop Design*. Consumers Energy will utilize the multifamily income-qualified one-stop shop approach and program design elements set forth on Attachment B to this Settlement Agreement.

15. *Pilot Investment.* The parties agree that Consumers Energy's pilot spending cap will remain at the 6% authorized in Case U-20372 to account for the health and safety pilot (as discussed in paragraph 16) and other potential pilot initiatives throughout the year. The health and safety pilot will be accounted for in the pilot budget but administered as part of the income qualified and multifamily income qualified programs.

16. *Income Qualified Health and Safety and Arrears Pilot.* Consumers Energy agrees to continue the Income Qualified Health and Safety pilot per the Settlement Agreement detailed

in MPSC Case No. U-20372, allocating $1,500,000 (budget allocated 80% electric and 20% gas) to single family and $350,000 to multifamily (budget allocated 80% electric and 20% gas) in 2022 and 2023. This pilot will be supported by pilot investment and administered through the Income Qualified single and multifamily programs to ensure integrated delivery of services to participants.

a. The pilot will involve the promotion of healthy building materials, as discussed in paragraphs 19 and 20.

b. The pilot will include an energy assistance arrears component to promote participation by both single and multifamily income-qualified customers who are in arrears, which can include CARE, HHC, and SER recipients.

c. The Company agrees to track the following pilot data points: number of customers served (including single family and multifamily breakdowns), deferrals identified, deferrals resolved, disconnections, health impacts (aggregated air quality data as identified by health provider organizations and participant surveys), total energy efficiency measures installed (type, number, and investment), average number of measures installed per customer, repairs completed, and total energy savings. For the arrears component, Consumers Energy also agrees to track: number of customers that received outreach regarding the arrears initiative and number of customers that received EWR services through the arrears initiative. The Company will report on this data consistent with the reporting schedule described in paragraph 28 of this agreement, except that the Company will begin its reporting for this pilot in the 2022 annual reconciliation filing.

d. Beginning in 2023, the Company will add tracking and reporting of the trade ally/community entity performing the Health and Safety pilot work and will provide aggregate data at the zip code level. Consumers Energy also agrees to provide a mid-year pilot update to interested parties.

e. The Company agrees to work with a third-party evaluator to develop and implement a plan for pilot evaluation including analysis of items such as bill impact, disconnections, impact on arrears, and health impacts. Before the Company implements any such plan, Consumers Energy will convene a meeting with the parties to this agreement and the third-party evaluator to discuss and provide input on the plan. The Company will include the final evaluation report in its EWR Reconciliation filing and will present final evaluation results and findings to the EWR Low Income Workgroup

f. All customer data collection, storage, and reporting will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

17. *Geographic Targeting*. The parties agree that in 2022 Consumers Energy will initiate the research studies identified below to support development of an income-qualified geotargeting protocol.

a. A low income needs assessment ("LINA") study to identify historic participation and coverage of the Company's income qualified programs, characterize low-income areas using available datasets, and develop scenarios for ranking geographies based on high need criteria or for optimizing specific

benefits to inform future prioritization of services. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

i. The parties agree that Consumer Energy will convene a meeting with interested parties to develop LINA study prioritization scenarios by July 31, 2022.

ii. The parties agree that the Company will utilize the LINA (including prioritization scenarios) to identify opportunities and program strategies for increasing participation by single and multifamily properties in areas identified as having high numbers of economically vulnerable households, electrically heated properties, and rented units that may be historically underserved.

b. The parties agree that Consumers Energy will initiate a follow-up research effort utilizing the LINA research to develop a protocol and implementation strategy for future geographic targeting initiatives designed to increase vulnerable and/or underserved low income customers' participation in income qualified single and multi-family programs through geographically and programmatically targeted approaches, ensure availability and promotion of air sealing and insulation measures by partner agencies and contractors, and increase trade ally awareness regarding the identification of health and safety deferrals. The Company agrees to incorporate the targeting protocol in the development of its next EWR Plan filing.

18. *Income Qualified Flint Initiative*. The Company agrees to invest $1 million between 2023 and 2024 to support an Income Qualified program targeted initiative in and around Flint to identify and assess the impact of a geographically targeted approach to the delivery of EWR services. The initiative aims to find and provide EWR intervention to economically vulnerable customers including those in arrears (which can include CARE, HHC, and SER recipients), struggling to pay utility bills, and at risk of deferral due to health and safety concerns. The initiative will focus on expanding existing efforts with community agencies, energy assistance coordination, outreach to income-qualified participants who recently installed emergency equipment, education and awareness efforts, trade ally education and engagement, and other targeted approaches.

a. Consumers Energy can use this $1 million in any of the following zip codes in Flint: 48502, 48503, 48504, 48505, 48506, and 48507; however, Consumers Energy will prioritize outreach to zip code 48505, followed by 48503 and then 48502, and finally by 48507, 40504, and 48506.

b. Consumers Energy will meet with interested parties by June 30, 2022 for input into project design. The meeting will be open to the parties to this agreement as well as to other stakeholders, including but not limited to Consumers Energy's customers, neighborhood associations, partner agencies, and contractors in Flint. During this meeting, the Company will provide a draft project outline which will include information regarding: (1) priority outreach targeting; (2) how Consumers Energy identified the areas it is proposing to target; (3) how many households Consumers Energy hopes to target within zip codes 48503, 48505, and 48502; (4) how Consumers Energy proposes to utilize its

investments in those target areas; (5) data collection and tracking considerations; and (6) incorporation of stakeholder input.

c. The Company agrees to work with a third-party evaluator to develop and implement a plan for initiative evaluation including analysis of items such as bill impact, disconnections, impact on arrears, and health impacts. Before the Company implements any such plan, Consumers Energy will convene a meeting with the parties to this agreement and the third-party evaluator to discuss and provide input on the plan. The Company will include the final evaluation report in its 2024 EWR Reconciliation filing and will present final evaluation results and findings to the EWR Low Income Workgroup.

d. The Company will utilize the LINA research and 2021 program data to inform the project design described in paragraph 18(b) and to develop customer participation, trade ally, and market potential data for use in identifying initiative targets and scope.

e. The Company will schedule a meeting with stakeholders in Q4 2022 to present its implementation plan and provide stakeholders an opportunity to review final project plans prior to implementation.

f. The Company will implement the Flint initiative no later than January 1, 2023. The intended goals of the Flint Initiative include, but are not limited to: (1) increasing participation in Consumers Energy's Income Qualified single family and multifamily programs in the targeted communities to support bill reduction, health, safety, and comfort benefits to participating households; (2) expanding partner agency and/or contractor efforts to install air sealing and insulation; (3)

ensuring energy auditors working in Flint are provided education on identifying health and safety hazards such as wiring issues, mold, lead, and asbestos and are communicating the presence and impact of the hazards to the occupant; and (4) supporting partner agencies and/or contractors working in Flint in identifying place-based, or other, opportunities to leverage funding from other federal, state, and/or private sources.

g. The Company agrees to track and report the data items listed in paragraph 16(c) of this agreement (Income Qualified Health and Safety Pilot). The Company will report on this data consistent with the reporting scheduled described in paragraph 28.

h. All customer data collection, storage and reporting will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

19. *Healthy Building Materials.* The parties agree that Consumers Energy will provide training and education on the use of healthy insulation and air-sealing materials for contractors. Specifically, Consumers will refer Income Qualified and Home Performance w/Energy Star

program energy auditors to the EEFA Guide to Healthier Materials report[1] and the Blue Green Alliance Building Clean Guide[2] and will encourage use of:

a. Healthy insulation materials
    i. Reduce use of spray foam insulation, polystyrene or polyisocyanurate, and mineral wool bats and boards; and
    ii. Prioritize healthier alternatives, including cellulose based or fiberglass insulation;
b. Healthy air sealant materials
    i. Reduce use of polyurethane and modified polymer sealants; and
    ii. Prioritize healthier alternatives, including acrylic sealants and noncombustible sodium silicate.

20. *Building Materials Tracking.* Beginning in the 4th quarter of 2022 or no later than January 1, 2023, Consumers Energy will begin to track the insulation and air sealant materials used in the Income Qualified program and Health and Safety Pilot. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate. Beginning with the Company's 2023 EWR Reconciliation, the Company will report in aggregate, the type of air sealing and insulation materials and number of healthy materials projects in the single and multifamily income qualified programs and health and safety pilot.

[1] Available at https://assets.ctfassets.net/ntcn17ss1ow9/3Bw3JFqYHgI7xWcvb7unwN/a17352bc9c1162b32729ed866ed98705/NRDC-3084_Guide_to_Healthier_Retrofit_Hi-res_smaller.pdf.
[2] Available at https://buildingclean.org/.

21. *Workforce Development.* The parties agree that Consumers Energy will implement a workforce development initiative to promote contractor diversity and certifications that could include healthy homes and/or Building Performance Institute ("BPI") certification. This initiative may include identifying assistance (funding) for certifications and training, promoting practices to increase contractor diversity, promoting Healthy Home and BPI certification, and reviewing current practices and workforce development efforts to identify and address barriers to success. The Company will provide workforce development updates in EWR annual reconciliations and a mid-year update to the Low Income EWR Workgroup

22. *Customer Rebate and Promotion Options.* The parties agree that Consumers Energy will allow customers who participate in EWR programs or pilot programs the option to receive incentive payments through bill credits, gift card, or a gift of energy as an alternative to receiving incentive payments through a paper check.

23. *Measure Adoption.* The parties agree the Company will continue to support efforts to increase adoption of major electric heat measures including heat pumps, air sealing, and insulation upgrades in electrically heated single and multifamily buildings. The Company agrees to share the status of these efforts as part of the mid-year status update and annual Reconciliation reporting outlined in paragraph 28.

24. *Refrigerant Pilot.* The parties agree the Company will continue its refrigerant replacement pilot targeted to restaurants and will expand the pilot to include grocery and other commercial customers. The pilot will be designed to assess energy savings opportunities from leak detection and repairs as well as refrigerant replacement, barriers to participation, and cost of projects. The Company will include pilot status and key findings in its annual reconciliation filings.

25. *Strategic Energy Management.* The parties agree the Company will continue development of its Industrial Energy Management ("IEM") component of the business solutions program, including reviewing best practices and developing a strategic plan for incorporating additional elements of a formal Strategic Energy Management ("SEM") program into the IEM initiative. The Company also agrees to report on IEM/SEM activities as a component of the business solutions program in the EWR Reconciliation filing. Reporting shall minimally include number of participants, incentives, total investment, annual savings, and lifetime savings. All data collection of customers will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

26. *On Bill Payment Pilot.* The parties agree the Company will expand the scope of the On-bill Payment pilot proposed in the Company's filing to include a cost analysis of adding a residential component. Consumers Energy will complete the residential cost analysis and provide initial findings to interested stakeholders no later than December 31, 2022. To expedite the pilot timeline, as part of this pilot, the Company is granted authority to fund up to 10 test projects in the residential and non-residential sectors, billing and collecting payment for these projects through the customer's monthly bill.

27. *Data Collection.* In 2022, Consumers Energy agrees to establish a process for tracking and reporting the following aggregate EWR data items and to provide an update to the parties to this settlement agreement on the process in the 4th quarter of 2022. Beginning on January 1, 2023, Consumers Energy will start tracking these items, and will provide interim findings by August 31, 2023 with inclusion in annual reconciliation filings to begin with the 2023 EWR annual reconciliation.

a. Residential customer participation by zip code (measure type, measure quantity, incentive amount, and savings by home/customer);

b. Number of energy assistance customers participating in EWR;

c. Number of energy assistance customers receiving EWR education/marketing;

d. CARE referrals to the EWR Income Qualified Program (single family and multifamily breakdowns, measures offered, measures installed, and marketing efforts by zip code); and

e. Income Qualified Program EWR measures and investment provided by community agencies as part of the Income Qualified program component and housing type information (i.e., single family vs. multifamily) from customers applying for energy assistance.

Additionally, beginning in the 4th quarter of 2022, Consumers Energy will include a voluntary request for customer income, race, and ethnicity in EWR post-participation surveys. All customer data collection, storage, and reporting will comply with current Commission data and privacy regulations and is subject to future Commission regulation on the collection, storage, and dissemination of customer information whether individual or in aggregate.

28. *Reporting.* For all reporting identified above, and unless otherwise reflected, Consumers Energy will provide reporting and status updates on data and reporting items and settlement item progress overall in biannual update meetings with the parties and in annual reconciliation reports, (certain reporting items (as named above) will begin with the 2023 EWR Reconciliation). Updates and reporting on these items will also be provided at the EWR Collaborative, EWR Low-Income Workgroup, and/or the Energy Affordability and Accessibility Collaborative at least once a year.

29. *Stakeholder Engagement.* The parties agree that Consumers Energy will continue its practice of consulting with Staff and stakeholders prior to filing its next EWR Plan to review investment, savings, portfolio composition, and other key elements with the purpose of incorporating stakeholder considerations when possible in the initial filing.

30. To the extent the Company proposes to increase its level of investment in helping low-income customers as part of the Company's next EWR Plan, Consumers Energy will consider whether it can accomplish such increase and cost-effectively reach the EWR savings targets without increasing total EWR program costs.

31. This settlement is entered into for the sole and express purpose of reaching a compromise among the parties. All offers of settlement and discussions relating to this settlement are, and shall be considered, privileged under MRE 408. If the Commission approves this Settlement Agreement without modification, neither the parties to this Settlement Agreement nor the Commission shall make any reference to or use this Settlement Agreement, or the order approving it, as a reason, authority, rationale, or example for taking any action or position or making any subsequent decision in any other case or proceeding; provided, however, such references may be made to enforce or implement the provisions of this Settlement Agreement and the order approving it.

32. This Settlement Agreement is based on the facts and circumstances of this case and is intended for the final disposition of Case No. U-20875. So long as the Commission approves this Settlement Agreement without any modification, the parties agree not to appeal, challenge, or otherwise contest the Commission order approving this Settlement Agreement. Except as otherwise set forth herein, the parties agree and understand that this Settlement Agreement does

not limit any party's right to take new and/or different positions on similar issues in other administrative proceedings or appeals related thereto.

33. This settlement is not severable. Each provision of the Settlement Agreement is dependent upon all other provisions of this Settlement Agreement. Failure to comply with any provision of this Settlement Agreement constitutes failure to comply with the entire Settlement Agreement. If the Commission rejects or modifies this Settlement Agreement or any provision of the Settlement Agreement, this Settlement Agreement shall be deemed to be withdrawn, shall not constitute any part of the record in this proceeding or be used for any other purpose, and shall be without prejudice to the pre-negotiation positions of the parties.

34. The parties agree that approval of this Settlement Agreement by the Commission would be reasonable and in the public interest.

35. The parties agree to waive Section 81 of the Administrative Procedures Act of 1969 (MCL 24.281), as it applies to the issues resolved in this Settlement Agreement if the Commission approves this Settlement Agreement without modification.

WHEREFORE, the undersigned parties respectfully request the Commission to approve this Settlement Agreement on an expeditious basis and to make it effective in accordance with its terms by final order.

MICHIGAN PUBLIC SERVICE COMMISSION STAFF

By: Heather M.S. Durian 2022.03.08 13:04:20 -05'00' _____ Date: _____

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CONSUMERS ENERGY COMPANY

By: Digitally signed by Theresa A.G. Staley Date: 2022.03.08 10:15:54 -05'00' Date: March 8, 2022

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NATURAL RESOURCES DEFENSE COUNCIL,
THE NATIONAL HOUSING TRUST,
THE ECOLOGY CENTER, AND SIERRA CLUB

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CONSUMERS ENERGY COMPANY

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NATURAL RESOURCES DEFENSE COUNCIL,
THE NATIONAL HOUSING TRUST,
THE ECOLOGY CENTER, AND SIERRA CLUB

By: _____ Date: _____

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SIERRA CLUB

By: _____ Date: 3/8/22

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ASSOCIATION OF BUSINESSES ADVOCATING TARIFF EQUITY

By: _____ Date: _____

Stephen A. Campbell (P76684)
Attorneys for ABATE
Clark Hill PLC
212 East Grand River Avenue
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SIERRA CLUB

By: _____ Date: _____

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ASSOCIATION OF BUSINESSES ADVOCATING TARIFF EQUITY

Stephen A. Campbell

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ATTACHMENT A

M.P.S.C. No. 14 – Electric
Consumers Energy Company

Sheet No. D-2.10

SURCHARGES

Rate Schedule	Energy Efficiency Program Surcharge (Case No. U-~~20702~~ *20875*) Effective beginning the ~~January 2022~~ *April 2022* Billing Month[1]		Distribution Charge for all Residential Rate Schedules		Total Distribution Charge [5]	
Residential Rates	$ ~~0.003434~~ *0.004803*/kWh	+	$0.058971/kWh	=	$ ~~0.062405~~ *0.063774*/kWh	
			System Access Charge for each Non-Residential Rate Schedule	=	Total System Access Charge [5]	
Rate GS and GSTU						
Tier 1: 0-1,250 kWh/mo.	$ ~~8.49~~ *8.37*/billing meter	+	$ 20.00/month	=	$ ~~28.49~~ *28.37*/month	
Tier 2: 1,251 – 5,000 kWh/mo.	~~44.77~~ *48.46*/billing meter	+	20.00/month	=	~~64.77~~ *68.46*/month	
Tier 3: 5,001 – 30,000 kWh/mo.	~~187.44~~ *223.94*/billing meter	+	20.00/month	=	~~207.44~~ *243.94*/month	
Tier 4: 30,001 – 50,000 kWh/mo.	~~342.33~~ *361.15*/billing meter	+	20.00/month	=	~~362.33~~ *381.15*/month	
Tier 5: >50,000 kWh/mo.	~~538.88~~ *522.83*/billing meter	+	20.00/month	=	~~558.88~~ *542.83*/month	
Rate GSD						
Tier 1: 0-1,250 kWh/mo.	$ ~~8.49~~ *8.37*/billing meter	+	$ 30.00/month	=	$ ~~38.49~~ *38.37*/month	
Tier 2: 1,251 – 5,000 kWh/mo.	~~44.77~~ *48.46*/billing meter	+	30.00/month	=	~~74.77~~ *78.46*/month	
Tier 3: 5,001 – 30,000 kWh/mo.	~~187.44~~ *223.94*/billing meter	+	30.00/month	=	~~217.44~~ *253.94*/month	
Tier 4: 30,001 – 50,000 kWh/mo.	~~342.33~~ *361.15*/billing meter	+	30.00/month	=	~~372.33~~ *391.15*/month	
Tier 5: >50,000 kWh/mo.	~~538.88~~ *522.83*/billing meter	+	30.00/month	=	~~568.88~~ *552.83*/month	
Rate GP						
Tier 1: 0-5,000 kWh/mo.	$ ~~22.82~~ *24.75*/billing meter	+	$ 100.00/month	=	$ ~~122.82~~ *124.75*/month	
Tier 2: 5,001 – 10,000 kWh/mo.	~~74.91~~ *67.95*/billing meter	+	100.00/month	=	~~172.91~~ *167.95*/month	
Tier 3: 10,001 – 30,000 kWh/mo.	~~325.17~~ *332.43*/billing meter	+	100.00/month	=	~~425.17~~ *432.43*/month	
Tier 4: 30,001 – 50,000 kWh/mo.	~~678.14~~ *754.28*/billing meter	+	100.00/month	=	~~778.14~~ *854.28*/month	
Tier 5: >50,000 kWh/mo.	~~1365.61~~ *1574.11*/billing meter	+	100.00/month	=	~~1465.61~~ *1674.11*/month	
Rate GPD, GPTU, and EIP						
Tier 1: 0-5,000 kWh/mo.	$ ~~22.82~~ *24.75*/billing meter	+	$ 200.00/month	=	$ ~~222.82~~ *224.75*/month	
Tier 2: 5,001 – 10,000 kWh/mo.	~~74.91~~ *67.95*/billing meter	+	200.00/month	=	~~274.91~~ *267.95*/month	
Tier 3: 10,001 – 30,000 kWh/mo.	~~325.17~~ *332.43*/billing meter	+	200.00/month	=	~~525.17~~ *532.43*/month	
Tier 4: 30,001 – 50,000 kWh/mo.	~~678.14~~ *754.28*/billing meter	+	200.00/month	=	~~878.14~~ *954.28*/month	
Tier 5: >50,000 kWh/mo.	~~1365.61~~ *1574.11*/billing meter	+	200.00/month	=	~~1565.61~~ *1774.11*/month	
Rate LTILRR and LED	~~1365.61~~ *1574.11*/billing meter	+	As specified in customer's written agreement	=	Customer specific total per month	
Rate GSG-2 [3]	NA		NA		NA	
Rate GML [3] [4]	NA		NA		NA	
Rate GUL [3] [4]	$ 0.27/fixture per month [2]		NA		NA	
Rate GU-LED	NA		NA		NA	
Rate GU	NA		NA		NA	
Rate PA	NA		NA		NA	
Rate ROA-R, ROA-S, ROA-P	Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule	

The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category for the secondary rate schedules, or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the Energy Efficiency Program Surcharge associated with the increases or decreases in consumption.

[1] This is subject to all general terms and conditions as shown in Rule C12., Energy Efficiency. The Energy Efficiency Program Surcharge amount may vary during specific months as authorized by the Michigan Public Service Commission. The Company will file a new tariff sheet to reflect any change in surcharges once the financial incentive recovery period has been completed.

[2] Company-Owned lighting fixture customers served on General Service Unmetered Lighting Rate GUL shall pay this surcharge. Rate codes 1455 and 1460 will not be charged this surcharge.

[3] Additional Rate Schedules can opt-in to the Energy Efficiency Program as described in Rule C12., Energy Efficiency.

[4] Lighting rates that choose to opt-in to the Energy Efficiency Program shall be assessed $0.27 per fixture per month.

[5] This charge will be shown on the monthly utility bill using the methodology as described in Rule C12., Energy Efficiency.

Issued XXXXXX XX, 2022 by
Garrick J. Rochow,
President and Chief Executive Officer,
Jackson, Michigan

Effective for bills rendered on and after
the Company's April 2022 Billing Month

Issued under authority of the
Michigan Public Service Commission
dated XXXXXX XX, 2022
in Case No. U-20875

M.P.S.C. No. 14 – Electric
Consumers Energy Company **Sheet No. D-2.20**

SURCHARGES

Rate Schedule	Energy Efficiency Self-Directed Customer Surcharge (Case No. U-~~20702~~ *20875*) Effective beginning the ~~August 2020~~ *April 2022* Billing Month[1]		System Access Charge for each Non-Residential Rate Schedule		Total System Access Charge [5]
Residential Rates	N/A				
Rate GS and GSTU					
Tier 1: 0-1,250 kWh/mo.	$ ~~0.55~~ *0.84* /billing meter	+	$ 20.00/month	=	$ ~~20.55~~ *20.84* /month
Tier 2: 1,251 – 5,000 kWh/mo.	~~2.93~~ *4.88* /billing meter	+	20.00/month	=	~~22.93~~ *24.88* /month
Tier 3: 5,001 – 30,000 kWh/mo.	~~13.99~~ *21.72* /billing meter	+	20.00/month	=	~~33.99~~ *41.72* /month
Tier 4: 30,001 – 50,000 kWh/mo.	~~21.40~~ *37.01* /billing meter	+	20.00/month	=	~~41.40~~ *57.01* /month
Tier 5: >50,000 kWh/mo.	~~32.05~~ *54.51* /billing meter	+	20.00/month	=	~~52.05~~ *74.51* /month
Rate GSD					
Tier 1: 0-1,250 kWh/mo.	$ ~~0.55~~ *0.84* /billing meter	+	$ 30.00/month	=	$ ~~30.55~~ *30.84* /month
Tier 2: 1,251 – 5,000 kWh/mo.	~~2.93~~ *4.88* /billing meter	+	30.00/month	=	~~32.93~~ *34.88* /month
Tier 3: 5,001 – 30,000 kWh/mo.	~~13.99~~ *21.72* /billing meter	+	30.00/month	=	~~43.99~~ *51.72* /month
Tier 4: 30,001 – 50,000 kWh/mo.	~~21.40~~ *37.01* /billing meter	+	30.00/month	=	~~51.40~~ *67.01* /month
Tier 5: >50,000 kWh/mo.	~~32.05~~ *54.51* /billing meter	+	30.00/month	=	~~62.05~~ *84.51* /month
Rate GP					
Tier 1: 0-5,000 kWh/mo.	$ ~~1.34~~ *2.59* /billing meter	+	$ 100.00/month	=	$ ~~101.34~~ *102.59* /month
Tier 2: 5,001 – 10,000 kWh/mo.	~~4.71~~ *6.85* /billing meter	+	100.00/month	=	~~104.71~~ *106.85* /month
Tier 3: 10,001 – 30,000 kWh/mo.	~~22.03~~ *32.89* /billing meter	+	100.00/month	=	~~122.03~~ *132.89* /month
Tier 4: 30,001 – 50,000 kWh/mo.	~~49.64~~ *72.95* /billing meter	+	100.00/month	=	~~149.64~~ *172.95* /month
Tier 5: >50,000 kWh/mo.	~~86.57~~ *153.44* /billing meter	+	100.00/month	=	~~186.57~~ *253.44* /month
Rate GPD, GPTU, and EIP					
Tier 1: 0-5,000 kWh/mo.	$ ~~1.34~~ *2.59* /billing meter	+	$ 200.00/month	=	$ ~~201.34~~ *202.59* /month
Tier 2: 5,001 – 10,000 kWh/mo.	~~4.71~~ *6.85* /billing meter	+	200.00/month	=	~~204.71~~ *206.85* /month
Tier 3: 10,001 – 30,000 kWh/mo.	~~22.03~~ *32.89* /billing meter	+	200.00/month	=	~~222.03~~ *232.89* /month
Tier 4: 30,001 – 50,000 kWh/mo.	~~49.64~~ *72.95* /billing meter	+	200.00/month	=	~~249.64~~ *272.95* /month
Tier 5: >50,000 kWh/mo.	~~86.57~~ *153.44* /billing meter	+	200.00/month	=	~~286.57~~ *353.44* /month
Rate LTILRR and LED	~~86.57~~ *153.44* /billing meter	+	As specified in customer's written agreement	=	Customer specific total per month
Rate GSG-2 [3]	NA		NA		NA
Rate GML [3] [4]	NA		NA		NA
Rate GUL [3] [4]	$ 0.27/fixture per month [2]		NA		NA
Rate GU-LED	NA		NA		NA
Rate GU	NA		NA		NA
Rate PA	NA		NA		NA
Rate ROA-R, ROA-S, ROA-P	Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule

The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category for the secondary rate schedules, or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the Energy Efficiency Program Surcharge associated with the increases or decreases in consumption.

[1] An eligible customer who files and implements a self-directed plan in compliance with Rule C12 is required to pay the Energy Efficiency Self-Directed Program Surcharge.

[2] This charge will be shown on the monthly utility bill using the methodology as described in Rule C12, Energy Efficiency.

M.P.S.C. No. 14 – Electric
Consumers Energy Company

SURCHARGES

Rate Schedule	Energy Efficiency Program Surcharge (Case No. U-*20875* ~~20865~~) Effective beginning the January *2023* ~~2022~~ Billing Month[1]		~~Distribution Charge for all Residential Rate Schedules~~ / *Energy Efficiency Self-Directed Customer Surcharge (Case No. U-20875) Effective beginning the January 2023 Billing Month*		~~Total Distribution Charge~~ / ~~System Access Charge~~
		~~+~~	~~$0.058971/kWh~~ / *NA*		~~$ 0.062405/kWh~~
Residential Rates	$*0.004712* ~~0.003434~~/kWh				
Non-Residential Rates					
Tier 1: 0 – 2,000 kWh/mo.	*$7.42/billing meter*		*$0.82/billing meter*		
Tier 2: 2,001 – 5,000 kWh/mo.	*48.87/billing meter*		*5.42/billing meter*		
Tier 3: 5,001 – 10,000 kWh/mo.	*107.62/billing meter*		*11.93/billing meter*		
Tier 4: 10,001 – 30,000 kWh/mo.	*254.96/billing meter*		*28.24/billing meter*		
Tier 5: 30,001 – 50,000 kWh/mo.	*616.41/billing meter*		*63.37/billing meter*		
Tier 6: 50,001 – 75,000 kWh/mo.	*920.63/billing meter*		*102.12/billing meter*		
Tier 7: 75,001 – 100,000 kWh/mo.	*1265.73/billing meter*		*140.40/billing meter*		
Tier 8: 100,001 – 150,000 kwh/mo.	*1402.59/billing meter*		*155.58/billing meter*		
Tier 9: 150,001 – 250,000 kWh/mo.	*1635.12/billing meter*		*181.37/billing meter*		
Tier 10: >250,000 kWh/mo.	*1784.14/billing meter*		*182.82/billing meter*		
~~Rate GS and GSTU~~					
~~Tier 1: 0–1,250 kWh/mo.~~	~~$ 8.49/billing meter~~	~~+~~	~~$ 20.00/month~~	~~=~~	~~$ 28.49/month~~
~~Tier 2: 1,251 – 5,000 kWh/mo.~~	~~44.77/billing meter~~	~~+~~	~~20.00/month~~	~~=~~	~~64.77/month~~
~~Tier 3: 5,001 – 30,000 kWh/mo.~~	~~187.44/billing meter~~	~~+~~	~~20.00/month~~	~~=~~	~~207.44/month~~
~~Tier 4: 30,001 – 50,000 kWh/mo.~~	~~342.33/billing meter~~	~~+~~	~~20.00/month~~	~~=~~	~~362.33/month~~
~~Tier 5: >50,000 kWh/mo.~~	~~538.88/billing meter~~	~~+~~	~~20.00/month~~	~~=~~	~~558.88/month~~
~~Rate GSD~~					
~~Tier 1: 0–1,250 kWh/mo.~~	~~$ 8.49/billing meter~~	~~+~~	~~$ 30.00/month~~	~~=~~	~~$ 38.49/month~~
~~Tier 2: 1,251 – 5,000 kWh/mo.~~	~~44.77/billing meter~~	~~+~~	~~30.00/month~~	~~=~~	~~74.77/month~~
~~Tier 3: 5,001 – 30,000 kWh/mo.~~	~~187.44/billing meter~~	~~+~~	~~30.00/month~~	~~=~~	~~217.44/month~~
~~Tier 4: 30,001 – 50,000 kWh/mo.~~	~~342.33/billing meter~~	~~+~~	~~30.00/month~~	~~=~~	~~372.33/month~~
~~Tier 5: >50,000 kWh/mo.~~	~~538.88/billing meter~~	~~+~~	~~30.00/month~~	~~=~~	~~568.88/month~~
~~Rate GP~~					
~~Tier 1: 0–5,000 kWh/mo.~~	~~$ 22.82/billing meter~~	~~+~~	~~$ 100.00/month~~	~~=~~	~~$ 122.82/month~~
~~Tier 2: 5,001 – 10,000 kWh/mo.~~	~~74.91/billing meter~~	~~+~~	~~100.00/month~~	~~=~~	~~174.91/month~~
~~Tier 3: 10,001 – 30,000 kWh/mo.~~	~~325.17/billing meter~~	~~+~~	~~100.00/month~~	~~=~~	~~425.17/month~~
~~Tier 4: 30,001 – 50,000 kWh/mo.~~	~~678.14/billing meter~~	~~+~~	~~100.00/month~~	~~=~~	~~778.14/month~~
~~Tier 5: >50,000 kWh/mo.~~	~~1365.61/billing meter~~	~~+~~	~~100.00/month~~	~~=~~	~~1465.61/month~~
~~Rate GPD, GPTU, and EIP~~					
~~Tier 1: 0–5,000 kWh/mo.~~	~~$ 22.82/billing meter~~	~~+~~	~~$ 200.00/month~~	~~=~~	~~$ 222.82/month~~
~~Tier 2: 5,001 – 10,000 kWh/mo.~~	~~74.91/billing meter~~	~~+~~	~~200.00/month~~	~~=~~	~~274.91/month~~
~~Tier 3: 10,001 – 30,000 kWh/mo.~~	~~325.17/billing meter~~	~~+~~	~~200.00/month~~	~~=~~	~~525.17/month~~
~~Tier 4: 30,001 – 50,000 kWh/mo.~~	~~678.14/billing meter~~	~~+~~	~~200.00/month~~	~~=~~	~~878.14/month~~
~~Tier 5: >50,000 kWh/mo.~~	~~1365.61/billing meter~~	~~+~~	~~200.00/month~~	~~=~~	~~1565.61/month~~
~~Rate LTILRR *and LED*~~	~~1365.61/billing meter~~	~~+~~	~~As specified in customer's written agreement~~	~~=~~	~~Customer specific total per month~~
Rate GSG-2 [3]	NA		NA		~~NA~~
Rate GML [3] [4]	NA		NA		~~NA~~
Rate GUL [3] [4]	$ 0.27/fixture per month [~~2~~]		NA		~~NA~~
Rate GU-LED	NA		NA		~~NA~~
Rate GU	NA		NA		~~NA~~
Rate PA	NA		NA		~~NA~~
Rate ROA-R, ROA-S, ROA-P	Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule		~~Same as Full Service Delivery Rate Schedule~~

The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category or the secondary rate schedules, or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the Energy Efficiency Program Surcharge associated with the increases or decreases in consumption.

(1) This is subject to all general terms and conditions as shown in Rule C12, Energy Efficiency. The Energy Efficiency Program Surcharge amount may vary during specific months as authorized by the Michigan Public Service Commission. The Company will file a new tariff sheet to reflect any change in surcharges once the financial incentive recovery period has been completed.

(2) *Non-Residential Rates include GS, GSTU, GSD, GP, GPTU, GPD, EIP, LITLLR and LED.*

(~~32~~) Company-Owned lighting fixture customers served on General Service Unmetered Lighting Rate GUL shall pay this surcharge. Rate codes 1455 and 1460 will not be charged this surcharge.

(~~43~~) Additional Rate Schedules can opt-in to the Energy Efficiency Program as described in Rule C12., Energy Efficiency.

(~~54~~) Lighting rates that choose to opt-in to the Energy Efficiency Program shall be assessed $0.27 per fixture per month.

(~~65~~) This charge will be shown on the monthly utility bill using the methodology as described in Rule C12, Energy Efficiency.

(7) *An eligible customer who files and implements a self-directed plan in compliance with Rule C12 is required to pay the Energy Efficiency Self-Directed Program Surcharge.*

Issued XXXXXX XX, 2022 by
Garrick J. Rochow,
President and Chief Executive Officer,
Jackson, Michigan

Effective for bills rendered on and after
the Company's January 2023 Billing Month

Issued under authority of the
Michigan Public Service Commission
dated XXXXXX XX, 2022
in Case No. U-20875

M.P.S.C. No. 14 – Electric
Consumers Energy Company

Sheet No. D-2.20

This sheet has been cancelled and is reserved for future use.

SURCHARGES

Rate Schedule	Energy Efficiency Self-Directed Customer Surcharge (Case No. U-20372) Effective beginning the August 2020 Billing Month [1]		System Access Charge for each Non-Residential Rate Schedule		Total System Access Charge [2]
Residential Rates	N/A				
Rate GS and GSTU					
Tier 1: 0-1,250 kWh/mo.	$ 0.55/billing meter	+	$ 20.00/month	=	$ 20.55/month
Tier 2: 1,251 – 5000 kWh/mo.	2.93/billing meter	+	20.00/month	=	22.93/month
Tier 3: 5,001 – 30,000 kWh/mo.	13.99/billing meter	+	20.00/month	=	33.99/month
Tier 4: 30,001 – 50,000 kWh/mo.	21.40/billing meter	+	20.00/month	=	41.40/month
Tier 5: >50,000 kWh/mo.	32.05/billing meter	+	20.00/month	=	52.05/month
Rate GSD					
Tier 1: 0-1,250 kWh/mo.	$ 0.55/billing meter	+	$ 30.00/month	=	$ 30.55/month
Tier 2: 1,251 – 5000 kWh/mo.	2.93/billing meter	+	30.00/month	=	32.93/month
Tier 3: 5,001 – 30,000 kWh/mo.	13.99/billing meter	+	30.00/month	=	43.99/month
Tier 4: 30,001 – 50,000 kWh/mo.	21.40/billing meter	+	30.00/month	=	51.40/month
Tier 5: >50,000 kWh/mo.	32.05/billing meter	+	30.00/month	=	62.05/month
Rate GP					
Tier 1: 0-5,000 kWh/mo.	$ 1.34/billing meter	+	$ 100.00/month	=	$ 101.34/month
Tier 2: 5,001 – 10,000 kWh/mo.	4.71/billing meter	+	100.00/month	=	104.71/month
Tier 3: 10,001 – 30,000 kWh/mo.	22.03/billing meter	+	100.00/month	=	122.03/month
Tier 4: 30,001 – 50,000 kWh/mo.	49.64/billing meter	+	100.00/month	=	149.64/month
Tier 5: >50,000 kWh/mo.	86.57/billing meter	+	100.00/month	=	186.57/month
Rate GPD, GPTU, and EIP					
Tier 1: 0-5,000 kWh/mo.	$ 1.34/billing meter	+	$ 200.00/month	=	$ 201.34/month
Tier 2: 5,001 – 10,000 kWh/mo.	4.71/billing meter	+	200.00/month	=	204.71/month
Tier 3: 10,001 – 30,000 kWh/mo.	22.03/billing meter	+	200.00/month	=	222.03/month
Tier 4: 30,001 – 50,000 kWh/mo.	49.64/billing meter	+	200.00/month	=	249.64/month
Tier 5: >50,000 kWh/mo.	86.57/billing meter	+	200.00/month	=	286.57/month
Rate LTILRR *and LED*	86.57/billing meter	+	As specified in the customer's written agreement	=	Customer specific total per month
Rate GSG-2	N/A		N/A		N/A
Rate GML	N/A		N/A		N/A
Rate GUL	N/A		N/A		N/A
Rate GU-LED	N/A		N/A		N/A
Rate GU	N/A		N/A		N/A
Rate PA	N/A		N/A		N/A
Rate ROA-R, ROA-S, ROA-P	Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule		Same as Full Service Delivery Rate Schedule

The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category or the secondary rate schedules, or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the Energy Efficiency Program Surcharge associated with the increases or decreases in consumption.

[1] An eligible customer who files and implements a self-directed plan in compliance with Rule C12 is required to pay the Energy Efficiency Self-Directed Program Surcharge.

[2] This charge will be shown on the monthly utility bill using the methodology as described in Rule C12, Energy Efficiency.

Issued XXXXXX XX, 2022 by
Garrick J. Rochow,
President and Chief Executive Officer,
Jackson, Michigan

Effective for bills rendered on and after
the Company's January 2023 Billing Month

Issued under authority of the
Michigan Public Service Commission
dated XXXXXX XX, 2022
in Case No. U-20875

M.P.S.C. No. 14 – Electric
Consumers Energy Company

Sheet No. C-65.00

(Continued From Sheet No. C-64.00)

C12. ENERGY EFFICIENCY (EE)

C12.1 Energy Efficiency Program – Electric

This rule implements the energy waste reduction (EWR) requirements of 2008 PA 295 and as amended in 2016 PA 342 in accordance with Orders issued by the Commission in Case No. U-15805. The monthly Energy Efficiency surcharges to be applied to each Rate Schedule are shown on Sheet No. D-2.10 of this Rate Book and shall be added with an existing fixed or volumetric charge on each eligible Rate Schedule as described below:

(1) For all customers on Residential Rate Schedules, the Energy Efficiency Program Surcharge *will show on the bill as Other Surcharges* ~~shall be added to the Distribution Charge~~ for both Full Service and ROA customers each month.

(2) For all eligible Nonresidential customers, the Energy Efficiency Program Surcharge *will show on the bill as Other Surcharges* ~~shall be added to the System Access charge~~ for both Full Service and ROA customers each month.

(3) For all Company-Owned lighting fixture customers served on General Service Unmetered Lighting Rate GUL, the Energy Efficiency Program Surcharge *will show on the bill as Other Surcharges* ~~shall be added to the Distribution Charge~~ per Luminaire each month.

The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category for the secondary rate schedules or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the Energy Efficiency Program Surcharge associated with increases or decreases in consumption.

A. Opt-In Option

(1) Customer-Owned lighting fixture customers served on General Service Unmetered Lighting Rate GUL and customers served on General Service Metered Lighting Rate GML are eligible to participate in the Energy Efficiency Program. The Energy Efficiency Program Surcharge will be billed monthly as follows:

a. Customers on Rate GUL shall have the per fixture surcharge multiplied by the number of fixtures for the customer's account ~~added to the Distribution Charge~~ per Luminaire *and will show on the bill as Other Surcharges* each month.

b. Customers on Rate GML shall have the per fixture surcharge multiplied by the number of fixtures for the customer's account ~~added to the System Access Charge~~ per billing meter *and will show on the bill as Other Surcharges* per month.

(2) Customers served on General Service Self Generation Rate GSG-2 are eligible to participate in the Energy Efficiency Program. These customers shall be charged the Large General Service Primary Demand Rate GPD Tier 5: > 50,000 kWh/mo. rate per billing meter per month as shown on Sheet No. D-2.10. The Energy Efficiency Program Surcharge ~~will be added to the appropriate System Access Charge~~ *is calculated* per billing meter per month*, and will show on the bill as Other Surcharges*.

C12.2 Self-Directed Customer Plans

An eligible primary or secondary electric customer is exempt from the mandatory energy efficiency surcharge(s), with the exception of the surcharge funding low-income programs as well as review and evaluation costs, if the customer files and implements a self-directed energy efficiency plan.

A. Eligibility

(1) Customers must have had an annual peak demand in the preceding year of at least 1 megawatt in the aggregate at all sites to be covered by the self-directed plan.

(2) The customer and sites covered by an implemented self-directed plan are not eligible to participate in any energy efficiency program of the Company.

B. Requirements

(1) A customer with a self-directed plan is required to pay the self-directed customer program surcharge. It *will show on the bill as Other Surcharges* ~~shall be added to the existing System Access Charge~~ for both Full Service and ROA customers that qualify.

(Continued on Sheet No. C-66.00)

M.P.S.C. No. 3 - Gas
Consumers Energy Company

Sheet No. D-2.00

SURCHARGES

Each Rate Schedule may be subject to Rule No. C8., Customer Attachment Program.

Rate Schedule	Energy Efficiency [1] Program Surcharge (Case No. U-*20875* ~~20865~~) Effective beginning the *April* ~~January~~ 2022 Billing Month [2]		Distribution Charge per Mcf for all Mcf		Total Distribution Charge [3]
Rate A	$*0.3785* ~~0.2709~~/Mcf	+	$4.2013 /Mcf	=	$*4.5798* ~~4.4722~~/Mcf
Rate A-1	*0.3785* ~~0.2709~~/Mcf	+	4.2013 /Mcf	=	*4.5798* ~~4.4722~~ /Mcf
Rate GS-1	*0.5466* ~~0.4795~~/Mcf	+	3.6255 /Mcf	=	*4.1721* ~~4.1050~~ /Mcf
Rate GS-2	*0.5466* ~~0.4795~~/Mcf	+	2.7060 /Mcf	=	*3.2526* ~~3.1855~~ /Mcf
Rate GS-3					
0 – 100,000 / Year	*0.5466* ~~0.4795~~/Mcf	+	2.5344 /Mcf	=	*3.0810* ~~3.0139~~ /Mcf
> 100,000 / Year	*0.0181* ~~0.0153~~/Mcf	+	2.5344 /Mcf	=	*2.5525* ~~2.5497~~ /Mcf
Rate GL	NA				
Rate ST			Transportation Charge per Mcf for all Mcf		Total Transportation Charge [3]
0 – 100,000 / Year	*0.5466* ~~0.4795~~/Mcf	+	$1.2162 /Mcf	=	$*1.7628* ~~1.6957~~/Mcf
> 100,000 / Year	*0.0181* ~~0.0153~~/Mcf	+	1.2162 /Mcf	=	*1.2343* ~~1.2315~~ /Mcf
Rate LT					
0 – 100,000 / Year	*0.5466* ~~0.4795~~/Mcf	+	1.1330 /Mcf	=	*1.6796* ~~1.6125~~ /Mcf
> 100,000 / Year	*0.0181* ~~0.0153~~/Mcf	+	1.1330 /Mcf	=	*1.1511* ~~1.1483~~ /Mcf
Rate XLT					
0 – 100,000 / Year	*0.5466* ~~0.4795~~/Mcf	+	0.7900 /Mcf	=	*1.3366* ~~1.2695~~ /Mcf
> 100,000 / Year	*0.0181* 0.0153/Mcf	+	0.7900 /Mcf	=	*0.8081* ~~0.8053~~ /Mcf
Rate XXLT					
0 – 100,000 / Year	NA		NA		NA
> 100,000 / Year	*0.0181* ~~0.0153~~/Mcf	+	0.4375 /Mcf	=	*0.4556* ~~0.4528~~ /Mcf
Rate CC	Per applicable distribution Rate Schedule				

[1] All surcharges shall be applied on a monthly basis. The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. No retroactive adjustment will be made due to the application of EE surcharges associated with increases or decreases in consumption.

[2] An Energy Efficiency Program Surcharge amount may vary during specific months as authorized by the Michigan Public Service Commission. The Company will file a new tariff sheet to reflect any change in surcharges once the financial incentive recovery period has been completed.

[3] The Energy Efficiency Program Surcharge and either the Distribution or Transportation Charge per Mcf for all Mcf for each rate will be added and shown as above on the monthly utility bill for all customers.

M.P.S.C. No. 3 - Gas
Consumers Energy Company

Sheet No. D-2.10

SURCHARGES

Each Rate Schedule may be subject to Rule No. C8., Customer Attachment Program.

Rate Schedule	Energy Efficiency Large Gas Transportation Opt-Out Program Surcharge [1] (Case No. U-*20875* ~~20372~~) Effective beginning the *April 2022* ~~August 2020~~ Billing Month		Transportation Charge per Mcf for all Mcf		Total Transportation Charge [2]
Rate A	NA		NA		NA
Rate A-1	NA		NA		NA
Rate GS-1	NA		NA		NA
Rate GS-2	NA		NA		NA
Rate GS-3	NA		NA		NA
Rate GL	NA		NA		NA
Rate ST > 100,000 / Year	$*0.0046* ~~0.0033~~/Mcf	+	$1.2162/Mcf	=	$*1.2208* ~~1.2195~~/Mcf
Rate LT > 100,000 / Year	*0.0046* ~~0.0033~~/Mcf	+	1.1330/Mcf	=	*1.1376* ~~1.1363~~/Mcf
Rate XLT > 100,000 / Year	*0.0046* ~~0.0033~~/Mcf	+	0.7900/Mcf	=	*0.7946* ~~0.7933~~/Mcf
Rate XXLT > 100,000 / Year	*0.0046* ~~0.0033~~/Mcf	+	0.4375/Mcf	=	*0.4421* ~~0.4408~~/Mcf
Rate CC	N/A				

(1) Gas Transportation customers on Rate ST, LT, XLT, or XXLT using more than 100,000 Mcf per year may be eligible to opt-out of the Energy Efficiency program. Eligible customers who elect to opt-out of the Energy Efficiency program will pay the Energy Efficiency Large Gas Transportation Opt-Out Program surcharge per Mcf on a monthly basis. This surcharge will be added to the Transportation charge for each applicable Rate Schedule. Eligibility is determined solely by the Company and is dependent upon terms and conditions of the Energy Efficiency Large Gas Transportation Customer Opt-Out Program as authorized in the April 17, 2012 order in Case No. U-16670.

(2) The Energy Efficiency Large Gas Transportation Opt-Out Program Surcharge and the Transportation Charge per Mcf for all Mcf will be added and shown as above on the monthly utility bill for all customers.

ATTACHMENT B

Attachment B - Multifamily Program Coordinated Delivery

2022-2025 (U-20875)

Purpose

The purpose of Attachment B is to outline Consumers Energy's One Stop Shop approach to administration of the EWR Multifamily Program as it pertains to the Company's EWR Plan U-20875 Settlement Agreement and Commission Order.

Program Description

The Multifamily program assists two primary customer segments: 1) Market Rate Multifamily and 2) Income Qualified Multifamily* property owners and tenants. The goal of this program is to help these customers understand their buildings' current energy use, achieve immediate energy savings through no-cost direct install measures, and provide incentives for prescriptive and/or custom measures to achieve deeper energy savings. Properties will have access to incentives for both in-unit tenant spaces and common area spaces. The program will seek to drive property owners to achieve maximum savings possible by offering seamless access to incentives for energy efficiency upgrades, regardless of the income status, rate class, or fuel type. In single-fuel areas, Consumers Energy staff will collaborate with other utility program staff to help provide a comprehensive energy efficiency solution.

*Income Qualified is defined as follows: Properties with 66% or greater of tenants living at or under 250% of the federal poverty level, 80% Area Median Income, properties participating in affordable housing programs under HUD, USDA, LIHTC, or other entities, and/or Consumers Energy pre-approved income-qualified eligibility.

Multifamily program investment levels are provided in Attachment D and highlighted in paragraphs 7 and 8 of the Settlement Agreement.

Program Features

1. **Property Assessment & Energy Savings Report** – this will be offered to every property; however, customers may forgo the assessment if they choose.
2. **Direct Install** of energy saving electric and natural gas products – will be offered at no cost to the customer; for Consumers Energy/DTE dual utility customers, the program will offer collaborative direct install with DTE.
3. **Prescriptive & Custom Incentives** – offered with a whole–building approach to savings. Incentives for market rate and income qualified multifamily programs may differ.
4. **Customer Qualification and Project Management** - multifamily implementation contractors engage with community partners and programs, assess publicly available data to identify and engage multifamily building owners and tenants, and conduct direct outreach to multifamily properties and trade allies to drive participation.

5. **Program Management** – energy advisors are assigned to properties to promote savings opportunities, educate owners and tenants on energy savings options and benefits, and provide guidance through the process and paperwork.
6. **ASHRAE Level 2 Audits -** offered to Income Qualified properties that are applying for Low Income Housing Tax Credits (LIHTC)
    a. For properties currently applying for LIHTC or currently planning/undergoing a LIHTC-funded rehabilitation, these projects will be offered a 36 + 2 months reservation, at a minimum. Language in the program application states incentives will be honored at the rate at which they were reserved, regardless of the program year the project completes and pays in. While the time period afforded customers in the current rebate reservation system has not been raised as a barrier to participation, the Company can test whether extending this period encourages participation.
7. **Benchmarking** – offered through the Consumers Energy Landlord Portal which is operated outside of the EWR program. Customers interested in benchmarking services will be directed to register for the Landlord Portal.

Detailed Description of Services and Features

1. **Property Assessment & Energy Savings Report**
    a. Some customers will receive a Building Assessment of their property with opportunities identified delivered in an Energy Savings Report. The on-site building assessment will include:
        i. Entry into attics, crawlspaces, and roofs
        ii. Review of construction documents (if available)
        iii. Blower door tests (if applicable)
        iv. Conversations with operations and maintenance staff
    b. Upon completion of the on-site Building Assessment the customer will receive a written and/or electronic copy of the Energy Savings Report. The report will provide specific recommendations for retrofit opportunities and serve as the basis for qualifying and prioritizing projects going forward. The Energy Savings Report will contain the following information:
        i. Report of current building conditions
        ii. Recommendations for energy efficiency upgrades including,
            1. Equipment specifications
            2. Estimated energy savings
            3. Estimated cost savings
            4. Estimated project payback
            5. Available program incentives
    c. Assessment database – program staff will utilize a database of existing equipment conditions collected from building assessments to provide follow-up and advice to customers based on the specific recommendations in their report. If the customer is unable to make an immediate investment this database will allow the program team to provide long-term support and engagement with the customer through follow-up on opportunities.

2. **Direct Install**
    a. After completion of the Building Assessment, the customer will be scheduled to receive direct installation of no cost energy savings measures at their facility, if they have not already completed these either on their own or through the program. No cost items will be installed by program staff as dictated by program rules in order to provide direct benefits to participants. Measures will be installed in-unit and in common areas to maximize energy savings. Measures include both electric and natural gas as listed here:
        i. LED lighting
        ii. Low-flow showerheads
        iii. Kitchen and bath aerators
        iv. Pipe wrap
        v. Thermostats (where applicable)
        vi. In-unit smart 7 plug power strips (where applicable)
        vii. Shower start valves (where applicable)
        viii. In-unit refrigerator replacement (on a limited basis)

3. **Incentives**
    a. **Prescriptive Incentives:** Incentives are paid on a per measure basis where a standard savings value per measure has been deemed. Measures are offered in the following categories:
        i. HVAC
        ii. Insulation
        iii. Lighting
        iv. Domestic Hot Water
    b. **Custom Incentives:** Paid on a per measure basis with savings calculated specifically for each project. These incentives are intended to cover all energy saving measures that are not included in the prescriptive measures and are paid on cents per kWh saved and dollars per MCF of natural gas saved.

4. **Project Management – Energy Advisors**
    a. Energy Advisors from the program team will engage in focused, proactive outreach activities to identify qualifying customers. Energy Advisors will be responsible for:
        i. Educating property managers about the program and its benefits
        ii. Facilitating the customer's participation in the program, beginning with Building Assessment, scheduling Direct Install, and identifying and supporting the customer through prescriptive/custom projects
        iii. Identifying low-income properties to target for EWR participation
            1. Energy Advisors and multifamily program management engage with local and state housing agencies, state EWR and energy assistance collaborative efforts, and internal collaborative efforts

to identify and target potential income-qualified properties for marketing and outreach.

2. The program may also use external data sources such as MSHDA and Low Income Housing Tax Credit Applicant Information (LIHTC) to support outreach and customer engagement efforts.

b. The Building Assessment will identify larger energy saving projects requiring customer investment and trade ally participation. Energy Advisors and Engineers will provide project management support through the following methods:
   i. Support prioritizing projects based on the customer's criteria (payback, cost, incentives) – this information will be available through the Energy Savings Report
   ii. Assistance identifying and connecting owners with local trade allies
   iii. Assistance completing the incentive application
   iv. Post inspection of completed projects*
   v. Referrals to program partners for available financing options

*Note: Due to the large volume of projects received in a program year post inspection cannot be completed on 100% of projects. Inspections will be conducted according to the guidelines in the Policies and Procedures manual.

5. ASHRAE Level 2 Audits for LIHTC Properties

a. Consumers Energy will cover up to 100% of an ASHRAE Level 2 audit, not to exceed $10,000 per property for properties applying for LIHTC through MSHDA. Consumers Energy will use a vetted group of third-party service providers to complete these audits for qualifying properties.
b. Properties applying for LIHTC will also be eligible to receive a 36-month reservation for their project. To be eligible for the 36-month reservation timeline, the applicant must provide proof of tax credit approval upon submission of the pre-application.
c. Consumers Energy will work with MSHDA to get connected with tax credit applicants and to obtain a list of applicants allocated tax credits in the current cycle.

6. Benchmarking

a. Qualifying customers who have expressed interest in tracking their energy performance will be directed to the Consumers Energy Landlord Portal by program staff. Information about benchmarking and other features of the Landlord portal will be shared with customers.

Income-Qualified Program Incentives

Multifamily EWR program staff will target low income incentive levels covering 20% (including both equipment and labor) and, averaging 40- 50% of total project cost as follows with the understanding that the level of incentives per building will be flexible depending on the nature of

the savings opportunities in the building, the severity of the barriers faced by the building owner in addressing those opportunities, and subject to overall program management design and operational flexibility. These incentive targets apply to:

a. In-unit measures that reduce tenant-paid utility bills (in-unit electric measures, in-unit DHW system improvements, and/or in-unit heating system where tenants are paying for heat); and
b. Envelope measures or for measures that reduce owner-paid utility bills (common area, central building systems, or in unit owner-paid building systems, as well as in-unit measures in master-metered buildings).

Data / Reporting Commitments

The reporting listed below will be included in the EWR Annual Report, filed with the Company's annual EWR Reconciliation. The Company will also provide a multifamily program status update to interested parties in biannual update meetings and at the EWR Collaborative, EWR Low-Income Workgroup, and/or the Energy Affordability and Accessibility Collaborative at least once a year (as noted in paragraph 28 of the Settlement Agreement). Consumers Energy will also meet with interested stakeholders in Q3 or Q4 2022 to assess and potentially update this list of reporting items.

<u>Property Level Data</u>

- # of properties, buildings and units served – for a single property all savings and measures will be reported together
- # of properties that received benchmarking services from the Landlord Portal
- # of properties that received an energy assessment from the program
- # of properties that received an ASHRAE Level 2 Audit
- # of properties that installed 2 or more prescriptive or custom measures
- # of Subsidized and Unsubsidized properties participating: In order to have the ability to track subsidized and unsubsidized properties served, a check box will be added to the application where the customer will self-identify property type (beginning in 2023)
- # of Rent vs. Own properties participating: In order to have the ability to track Rent vs. Own status, a check box will be added to the application where the customer will self-identify this information (beginning in 2023)
- Overall conversion rate: what % of projects moved from assessment/direct install to prescriptive/custom

<u>Measure Level Data</u>

- # of properties reported above that received incentives in the following categories:
    - HVAC
    - Insulation
    - Lighting
    - Domestic Hot Water
    - Custom

- Total # of installations, in the properties reported above, for each DI measure
- # of properties that participated only in DI
- # of properties that received only prescriptive or custom incentives
- # of properties that received both direct install and prescriptive and/or custom incentives

Investment Data

- Total incentive spending (by fuel)
- Total non-incentive spending (by fuel)
- Incentives as a portion of total actual or estimated project cost (including both materials and labor)
    - For direct install (assume 100% covered)
    - For prescriptive/custom
    - Overall (direct install and prescriptive/custom)
    - Average % of project total cost covered by incentives (exclusive of direct install)

Savings Data

- MWh savings achieved in paid installations
- Mcf savings achieved in paid installations

Marketing and Outreach

- Information on Multifamily Low-Income collaboration efforts, presented in coordination with DTE Energy
- Collaboration with MSHDA
- Total properties contacted
- Coordination with energy assistance programs

ATTACHMENT C

Consumers Energy - Energy Waste Reduction Program
2022 - 2025 Energy Efficiency Plan Performance Metrics
Electric Service

Line No.	Performance Metric	Description	Weight		Year	Performance Requirements Minimum	Performance Requirements Maximum	Financial Incentive (1)(2) (% of Investment) Minimum	Financial Incentive (1)(2) (% of Investment) Maximum	Explanation
1	Lifetime Energy Savings	Lifetime MWh savings for exceeding 1.0% annual reduction (based on a sliding scale)	80.00%		2022	2,969,555 MWh	5,939,110 MWh	12.00%	16.00%	Incentive to promote long life measures.
					2023	2,987,823 MWh	5,975,646 MWh			
					2024	2,996,376 MWh	5,992,752 MWh			
					2025	2,991,974 MWh	5,983,949 MWh			
2	Low Income Investment(3)	Investment in low income programs	12.50%	IQ	2022	$ 8,160,000	$ 9,600,000	1.50%	2.50%	Incentive to promote investing in energy savings measures for low-income customers.
				MF	2022	$ 7,990,000	$ 9,400,000			
				IQ	2023	$ 8,160,000	$ 9,600,000			
				MF	2023	$ 9,095,000	$ 10,700,000			
				IQ	2024	$ 9,010,000	$ 10,600,000			
				MF	2024	$ 10,030,000	$ 11,800,000			
				IQ	2025	$ 9,350,000	$ 11,000,000			
				MF	2025	$ 10,710,000	$ 12,600,000			
3	Low Income Targeted Measures (4)	Installations of Targeted Measures for income qualified customers.	12.50%		2022	3,020	4,530	1.50%	2.50%	Promotes adoption of an energy efficient primary heat source for income qualified customers.
					2023	4,087	6,131			
					2024	5,154	7,731			
					2025	6,221	9,332			

Notes:
(1) Eligibility to earn financial incentives is determined first by demonstrating achievement of the annual incremental savings thresholds established in Section 75 of Public Act 342 of 2016.
(2) Financial incentive is based on sliding scale between minimum and maximum caps. Total not to exceed 100% of the financial incentive cap of 20%.
(3) Separate low-income single and multifamily program budgets are targets. Financial incentive is based on the combined total spend.
(4) Targeted measures are defined as cold climate heat pump, heat pump hot water heater, air sealing (20%, 30%, 40%, 50%), above grade wall insulation, attic insulation, basement wall insulation, crawlspace insulation, floor insulation, kneewall insulation or rim joist insulation. Electrically heated single family or multifamily buildings with air-conditioning or non-Consumers fossil fuel heat (gas or propane) and air-conditioning. All measures counted separately. Insulation and air sealing measures in terms of 1000 sq ft. Count of multifamily housing units affected towards target, e.g. a 20-unit building that gets both central heating system replacement and attic insulation counts as 40 measures.
(5) For 2023 and beyond minimum will be based on the higher of actuals and listed minimum targets.

Consumers Energy - Energy Waste Reduction Program												
Recommended Financial Incentive Structure for Electric												
Legislative First Year Savings Tiers			Metric 1: Lifetime Savings (MWh)			Metric 2: Low Income Investment ($1,000)			Metric 3: Low Income Targeted Measure Installations			
			Minimum Basis (100%) Year 2022 = 2,969,555 Year 2023 = 2,987,823 Year 2024 = 2,996,376 Year 2025 = 2,991,974			Minimum Basis (85%) Year 2022 = $16,150 Year 2023 = $17,255 Year 2024 = $19,040 Year 2025 = $20,060			Min Basis (100%) to Max Basis (150%) Year 2022 = 3,020 - 4,530 Year 2023 = 4,087 - 6,131 Year 2024 = 5,154 - 7,731 Year 2025 = 6,221 - 9,332		
			Savings weighted at 80%			*Weighted at 12.5%*			*Weighted at 12.5%*		
	% Savings	*% Incentive*		*Weight*	*% Incentive*		*Weight*	*% Incentive*		*Weight*	*% Incentive*
Tier 1	1.00%	15.00%	***Tier 1***	100%	12.00%	***Tier 1***	85.00%	1.50%	***Tier 1***	100%	1.50%
	1.01%	15.00%		102%	12.08%		85.30%	1.52%		101%	1.52%
	1.02%	15.00%		104%	12.16%		85.60%	1.54%		102%	1.54%
	1.03%	15.00%		106%	12.24%		85.90%	1.56%		103%	1.56%
	1.04%	15.00%		108%	12.32%		86.20%	1.58%		104%	1.58%
	1.05%	15.00%		110%	12.40%		86.50%	1.60%		105%	1.60%
	1.06%	15.00%		112%	12.48%		86.80%	1.62%		106%	1.62%
	1.07%	15.00%		114%	12.56%		87.10%	1.64%		107%	1.64%
	1.08%	15.00%		116%	12.64%		87.40%	1.66%		108%	1.66%
	1.09%	15.00%		118%	12.72%		87.70%	1.68%		109%	1.68%
	1.10%	15.00%		120%	12.80%		88.00%	1.70%		110%	1.70%
	1.11%	15.00%		122%	12.88%		88.30%	1.72%		111%	1.72%
	1.12%	15.00%		124%	12.96%		88.60%	1.74%		112%	1.74%
	1.13%	15.00%		126%	13.04%		88.90%	1.76%		113%	1.76%
	1.14%	15.00%		128%	13.12%		89.20%	1.78%		114%	1.78%
	1.15%	15.00%		130%	13.20%		89.50%	1.80%		115%	1.80%
	1.16%	15.00%		132%	13.28%		89.80%	1.82%		116%	1.82%
	1.17%	15.00%		134%	13.36%		90.10%	1.84%		117%	1.84%
	1.18%	15.00%		136%	13.44%		90.40%	1.86%		118%	1.86%
	1.19%	15.00%		138%	13.52%		90.70%	1.88%		119%	1.88%
	1.20%	15.00%		140%	13.60%		91.00%	1.90%		120%	1.90%
	1.21%	15.00%		142%	13.68%		91.30%	1.92%		121%	1.92%
	1.22%	15.00%		144%	13.76%		91.60%	1.94%		122%	1.94%
	1.23%	15.00%		146%	13.84%		91.90%	1.96%		123%	1.96%
	1.24%	15.00%		148%	13.92%		92.20%	1.98%		124%	1.98%
Tier 2	1.25%	17.50%	***Tier 2***	150%	14.00%	***Tier 2***	92.50%	2.00%	***Tier 2***	125%	2.00%
	1.26%	17.50%		152%	14.08%		92.80%	2.02%		126%	2.02%
	1.27%	17.50%		154%	14.16%		93.10%	2.04%		127%	2.04%
	1.28%	17.50%		156%	14.24%		93.40%	2.06%		128%	2.06%
	1.29%	17.50%		158%	14.32%		93.70%	2.08%		129%	2.08%
	1.30%	17.50%		160%	14.40%		94.00%	2.10%		130%	2.10%
	1.31%	17.50%		162%	14.48%		94.30%	2.12%		131%	2.12%
	1.32%	17.50%		164%	14.56%		94.60%	2.14%		132%	2.14%
	1.33%	17.50%		166%	14.64%		94.90%	2.16%		133%	2.16%
	1.34%	17.50%		168%	14.72%		95.20%	2.18%		134%	2.18%
	1.35%	17.50%		170%	14.80%		95.50%	2.20%		135%	2.20%
	1.36%	17.50%		172%	14.88%		95.80%	2.22%		136%	2.22%
	1.37%	17.50%		174%	14.96%		96.10%	2.24%		137%	2.24%
	1.38%	17.50%		176%	15.04%		96.40%	2.26%		138%	2.26%
	1.39%	17.50%		178%	15.12%		96.70%	2.28%		139%	2.28%
	1.40%	17.50%		180%	15.20%		97.00%	2.30%		140%	2.30%
	1.41%	17.50%		182%	15.28%		97.30%	2.32%		141%	2.32%
	1.42%	17.50%		184%	15.36%		97.60%	2.34%		142%	2.34%
	1.43%	17.50%		186%	15.44%		97.90%	2.36%		143%	2.36%
	1.44%	17.50%		188%	15.52%		98.20%	2.38%		144%	2.38%
	1.45%	17.50%		190%	15.60%		98.50%	2.40%		145%	2.40%
	1.46%	17.50%		192%	15.68%		98.80%	2.42%		146%	2.42%
	1.47%	17.50%		194%	15.76%		99.10%	2.44%		147%	2.44%
	1.48%	17.50%		196%	15.84%		99.40%	2.46%		148%	2.46%
	1.49%	17.50%		198%	15.92%		99.70%	2.48%		149%	2.48%
Tier 3	**1.50%**	**20.00%**	***Tier 3***	200%	**16.00%**	***Tier 3***	100.00%	**2.50%**	***Tier 3***	**150%**	**2.50%**

Note: The financial incentive is the minimum of the first year savings incentive or total metric incentive calculated by adding up the percentages earned in each of the 2 metrics. The total incentive award can not exceed the award based on the Company's 1st year energy savings achieved. (Financial incentive payment can not exceed 20% of program spend, or 30% of net benefits.

Consumers Energy - Energy Waste Reduction Program
2022 - 2025 Energy Efficiency Plan Performance Metrics
Gas Service

Line No.	Performance Metric	Description	Weight		Year	Performance Requirements Minimum	Performance Requirements Maximum	Financial Incentive [1][2] (% of Investment) Minimum	Financial Incentive [1][2] (% of Investment) Maximum	Explanation
1	Lifetime Energy Savings	Lifetime Mcf savings for exceeding 0.75% annual reduction (based on a sliding scale).	80.00%		2022	24,288,537 Mcf	32,384,708 Mcf	12.00%	16.00%	Incentive to promote long life measures.
					2023	24,337,355 Mcf	32,449,798 Mcf			
					2024	24,343,431 Mcf	32,457,899 Mcf			
					2025	24,366,016 Mcf	32,488,014 Mcf			
2	Low Income Investment[3]	Investment in low income programs.	10.00%	IQ	2022	$ 13,387,500	$ 15,750,000	1.20%	2.00%	Incentive to promote investing in energy savings measures for low-income customers.
				MF	2022	$ 6,630,000	$ 7,800,000			
				IQ	2023	$ 14,875,000	$ 17,500,000			
				MF	2023	$ 7,650,000	$ 9,000,000			
				IQ	2024	$ 17,000,000	$ 20,000,000			
				MF	2024	$ 8,925,000	$ 10,500,000			
				IQ	2025	$ 18,700,000	$ 22,000,000			
				MF	2025	$ 8,925,000	$ 10,500,000			
3	Low Income Targeted Measures Installed[4][5]	Number of premium measures installed for income qualified.	15.00%		2022	4,794	7,191	1.80%	3.00%	Incentive to promote installation of targeted measures in single and multifamily income qualified units.
					2023	6,016	9,024			
					2024	10,365	15,547			
					2025	12,900	19,350			

Notes:
(1) Eligibility to earn financial incentives is determined first by demonstrating achievement of the annual incremental savings thresholds established in Section 75 of Public Act 342 of 2016.
(2) Financial incentive is based on sliding scale between minimum and maximum caps. Total not to exceed 100% of the financial incentive cap of 20%.
(3) Separate low income single and multifamily program budgets are targets. Financial incentive is based on the combined total spend.
(4) Targeted measures are defined as air sealing 20%, air sealing 30%, air sealing 40%, air sealing 50%, above grade wall insulation, attic insulation, basement wall insulation, crawlspace insulation, floor insulation, kneewall insulation or rim joist insulation with all measures counted separately. Maximum of one air sealing measure per housing unit can be counted. Insulation and air sealing measures in terms of 1000 sq ft. Count number of multifamily housing units affected towards target, e.g. a 20-unit building that gets both air sealing and attic installation counts as 40 measures.
(5) For 2023 and beyond minimum will be based on the higher of actuals and listed miminum targets, and the maximum is 1.5 times minimum.

Consumers Energy - Energy Waste Reduction Program												
Recommended Financial Incentive Structure for Gas												
Legislative First Year Savings Tiers			Metric 1: Lifetime Savings (MCF)			Metric 2: Low Income Investment - ($1,000)			Metric 3: Number Low Income Targeted Measures Installed			
			Minimum Basis (100%) Year 2022 = 24,288,537 Year 2023 = 24,337,355 Year 2024 = 24,343,431 Year 2025 = 24,366,016			Minimum Basis (85%) Year 2022 = $20,018 Year 2023 = $22,525 Year 2024 = $25,925 Year 2025 = $27,625			Min Basis (100%) to Max Basis (150%) Year 2022 = 4,794 - 7,191 Year 2023 = 6,016 - 9,024 Year 2024 = 10,365 - 15,547 Year 2025 = 12,900 - 19,350		
			Savings weighted at 80%			*Weighted at 10%*			*Weighted at 15%*		
	% Savings	*Incentive Cap*		*Weight*	*Incentive Cap*		*Weight*	*Incentive Cap*		*Weight*	*Incentive Cap*
Tier 1	**0.750%**	**15.00%**	***Tier 1***	100.0%	12.00%	***Tier 1***	85.0%	1.200%	***Tier 1***	100.0%	1.800%
	0.755%	15.00%		100.7%	12.08%		85.3%	1.216%		101.0%	1.824%
	0.760%	15.00%		101.3%	12.16%		85.6%	1.232%		102.0%	1.848%
	0.765%	15.00%		102.0%	12.24%		85.9%	1.248%		103.0%	1.872%
	0.770%	15.00%		102.7%	12.32%		86.2%	1.264%		104.0%	1.896%
	0.775%	15.00%		103.3%	12.40%		86.5%	1.280%		105.0%	1.920%
	0.780%	15.00%		104.0%	12.48%		86.8%	1.296%		106.0%	1.944%
	0.785%	15.00%		104.7%	12.56%		87.1%	1.312%		107.0%	1.968%
	0.790%	15.00%		105.3%	12.64%		87.4%	1.328%		108.0%	1.992%
	0.795%	15.00%		106.0%	12.72%		87.7%	1.344%		109.0%	2.016%
	0.800%	15.00%		106.7%	12.80%		88.0%	1.360%		110.0%	2.040%
	0.805%	15.00%		107.3%	12.88%		88.3%	1.376%		111.0%	2.064%
	0.810%	15.00%		108.0%	12.96%		88.6%	1.392%		112.0%	2.088%
	0.815%	15.00%		108.7%	13.04%		88.9%	1.408%		113.0%	2.112%
	0.820%	15.00%		109.3%	13.12%		89.2%	1.424%		114.0%	2.136%
	0.825%	15.00%		110.0%	13.20%		89.5%	1.440%		115.0%	2.160%
	0.830%	15.00%		110.7%	13.28%		89.8%	1.456%		116.0%	2.184%
	0.835%	15.00%		111.3%	13.36%		90.1%	1.472%		117.0%	2.208%
	0.840%	15.00%		112.0%	13.44%		90.4%	1.488%		118.0%	2.232%
	0.845%	15.00%		112.7%	13.52%		90.7%	1.504%		119.0%	2.256%
	0.850%	15.00%		113.3%	13.60%		91.0%	1.520%		120.0%	2.280%
	0.855%	15.00%		114.0%	13.68%		91.3%	1.536%		121.0%	2.304%
	0.860%	15.00%		114.7%	13.76%		91.6%	1.552%		122.0%	2.328%
	0.865%	15.00%		115.3%	13.84%		91.9%	1.568%		123.0%	2.352%
	0.870%	15.00%		116.0%	13.92%		92.2%	1.584%		124.0%	2.376%
Tier 2	**0.875%**	**17.50%**	***Tier 2***	116.7%	14.00%	***Tier 2***	92.5%	1.600%	***Tier 2***	125.0%	2.400%
	0.880%	17.50%		117.3%	14.08%		92.8%	1.616%		126.0%	2.424%
	0.885%	17.50%		118.0%	14.16%		93.1%	1.632%		127.0%	2.448%
	0.890%	17.50%		118.7%	14.24%		93.4%	1.648%		128.0%	2.472%
	0.895%	17.50%		119.3%	14.32%		93.7%	1.664%		129.0%	2.496%
	0.900%	17.50%		120.0%	14.40%		94.0%	1.680%		130.0%	2.520%
	0.905%	17.50%		120.7%	14.48%		94.3%	1.696%		131.0%	2.544%
	0.910%	17.50%		121.3%	14.56%		94.6%	1.712%		132.0%	2.568%
	0.915%	17.50%		122.0%	14.64%		94.9%	1.728%		133.0%	2.592%
	0.920%	17.50%		122.7%	14.72%		95.2%	1.744%		134.0%	2.616%
	0.925%	17.50%		123.3%	14.80%		95.5%	1.760%		135.0%	2.640%
	0.930%	17.50%		124.0%	14.88%		95.8%	1.776%		136.0%	2.664%
	0.935%	17.50%		124.7%	14.96%		96.1%	1.792%		137.0%	2.688%
	0.940%	17.50%		125.3%	15.14%		96.4%	1.808%		138.0%	2.712%
	0.945%	17.50%		126.0%	15.12%		96.7%	1.824%		139.0%	2.736%
	0.950%	17.50%		126.7%	15.20%		97.0%	1.840%		140.0%	2.760%
	0.955%	17.50%		127.3%	15.28%		97.3%	1.856%		141.0%	2.784%
	0.960%	17.50%		128.0%	15.36%		97.6%	1.872%		142.0%	2.808%
	0.965%	17.50%		128.7%	15.44%		97.9%	1.888%		143.0%	2.832%
	0.970%	17.50%		129.3%	15.52%		98.2%	1.904%		144.0%	2.856%
	0.975%	17.50%		130.0%	15.60%		98.5%	1.920%		145.0%	2.880%
	0.980%	17.50%		130.7%	15.68%		98.8%	1.936%		146.0%	2.904%
	0.985%	17.50%		131.3%	15.76%		99.1%	1.952%		147.0%	2.928%
	0.990%	17.50%		132.0%	15.84%		99.4%	1.968%		148.0%	2.952%
	0.995%	17.50%		132.7%	15.92%		99.7%	1.984%		149.0%	2.976%
Tier 3	**1.000%**	**20.00%**	***Tier 3***	**133.3%**	**16.00%**	***Tier 3***	100.0%	**2.000%**	***Tier 3***	**150.0%**	**3.000%**

Note: The financial incentive is the minimum of the first year savings incentive or total metric incentive calculated by adding up the percentages earned in each of the 2 metrics. The total incentive award can not exceed the award based on the Company's 1st year energy savings achieved. (Financial incentive payment

ATTACHMENT D

Calculation of Annual Energy Savings Targets
Electric Service (Megawatt-hours)

Line No.	Description	(a) 2020	(b) 2021	(c) 2022	(d) 2023	(e) 2024	(f) 2025
1	Retail Electric Sales	31,176,139	31,258,475	31,450,768	31,540,801	31,494,467	31,108,874
2	Prior Year Weather Normal Sales		31,176,139	31,258,475	31,450,768	31,540,801	31,494,467
3	Electric Statutory Savings Percentage		1.0%	1.0%	1.0%	1.0%	1.0%
4	Electric Statutory Savings Target		311,761	312,585	314,508	315,408	314,945

Calculation of Annual Energy Savings Targets
Gas Service (Thousand Cubic Feet)

Line No.	Description	(a) 2020	(b) 2021	(c) 2022	(d) 2023	(e) 2024	(f) 2025
1	Retail Gas Sales Sales [1]	299,859,000	302,405,459	304,476,425	304,547,487	304,811,649	304,757,885
2	Electric Generation Gas Sales [2]	14,070,000	18,329,000	19,829,000	19,829,000	19,829,000	19,829,000
3	Total Adjusted Gas Sales	285,789,000	284,076,459	284,647,425	284,718,487	284,982,649	284,928,885
2	Prior Year Weather Normal Sales		285,789,000	284,076,459	284,647,425	284,718,487	284,982,649
4	Gas Statutory Savings Percentage		0.75%	0.75%	0.75%	0.75%	0.75%
5	Gas Statutory Savings Target		2,143,418	2,130,573	2,134,856	2,135,389	2,137,370

Line No.	Description	Investments 2022 ($)	Investments 2023 ($)	Investments 2024 ($)	Investments 2025 ($)	First Year Energy Savings 2022 (MWh)	First Year Energy Savings 2023 (MWh)	First Year Energy Savings 2024 (MWh)	First Year Energy Savings 2025 (MWh)	Lifetime Energy Savings 2022 (MWh)	Lifetime Energy Savings 2023 (MWh)	Lifetime Energy Savings 2024 (MWh)	Lifetime Energy Savings 2025 (MWh)
	Residential Class												
1	Appliance Recycling	$ 8,059,748	$ 8,899,257	$ 8,765,432	$ 9,033,576	34,075	34,951	35,190	35,950	273,609	280,904	283,796	290,444
2	Energy Dashboard	558,459	768,326	733,462	765,268	11,558	13,291	14,886	16,673	11,558	13,291	14,886	16,673
3	ENERGY STAR Appliances	844,438	879,947	908,292	968,289	2,802	2,978	3,004	3,198	26,706	28,377	28,552	30,387
4	ENERGY STAR Lighting	4,557,328	4,610,374	3,516,134	3,064,784	22,653	20,058	8,875	3,924	95,363	84,441	28,486	8,671
5	Home Energy Analysis	4,721,709	4,799,354	4,590,772	3,026,806	3,775	3,265	2,491	2,074	26,628	24,118	19,388	17,105
6	Home Energy Reports	1,146,839	1,080,817	2,130,956	1,991,929	15,255	14,975	16,603	16,307	15,255	14,975	16,603	16,307
8	HVAC and Water Heating	2,540,836	2,778,654	2,930,723	3,151,388	3,167	3,065	3,396	3,884	39,874	37,636	41,735	47,933
7	Home Performance with ENERGY STAR	469,226	519,963	535,146	552,313	251	255	258	261	4,027	4,095	4,148	4,202
9	Income-Qualified Energy Assistance	9,600,000	9,600,000	10,600,000	11,000,000	21,787	21,955	20,145	18,691	190,590	191,694	190,825	184,605
10	Income-Qualified Multifamily	9,400,000	10,700,000	11,800,000	12,600,000	10,985	10,985	10,981	10,978	124,691	124,662	124,023	123,408
11	Insulation & Windows	706,955	727,787	748,154	774,526	600	603	607	615	14,606	14,673	14,775	14,951
12	Residential New Construction	643,822	666,027	837,570	1,054,315	F 1,421	1,629	1,839	2,077	27,285	31,388	35,486	40,123
12	Residential Marketplace	1,000,062	1,047,198	1,075,939	1,128,079	3,106	3,270	3,434	3,602	27,927	29,376	30,849	32,342
13	Residential Multifamily	2,743,143	2,758,101	2,753,216	2,763,436	2,839	2,920	2,991	3,076	30,903	32,160	32,878	33,816
13	Residential Agriculture	766,804	779,931	789,233	802,951	874	874	874	874	12,936	12,936	12,936	12,936
14	Think! Energy	1,338,699	1,394,342	1,354,704	1,349,329	4,830	4,967	4,812	4,762	32,221	33,158	32,382	32,775
15	Residential Pilot Programs[1]	3,685,107	3,890,447	4,027,486	4,032,225	9,229	9,234	8,597	8,370	62,943	63,157	60,094	59,762
16	*Residential Subtotal*	*$ 52,783,176*	*$ 55,900,527*	*$ 58,097,219*	*$ 58,059,215*	*149,205*	*149,275*	*138,987*	*135,315*	*1,017,121*	*1,021,041*	*971,842*	*966,436*
	Business Class												
17	Comprehensive Business Solutions	$ 81,178,149	$ 83,989,188	$ 85,129,553	$ 86,905,388	383,745	392,473	405,863	413,414	4,755,736	4,939,624	5,159,632	5,273,125
18	Small Business Solutions	18,824,165	19,716,341	20,304,838	21,203,625	63,430	64,569	65,762	67,003	745,311	765,471	779,619	795,073
19	Business Multifamily	1,175,707	1,191,048	1,185,319	1,191,432	2,541	2,533	2,500	2,466	28,760	28,775	28,312	27,856
20	Business Pilot Programs[1]	7,518,621	7,789,227	7,928,266	8,130,444	29,652	30,302	31,261	31,838	364,603	378,057	393,466	401,938
21	*Business Subtotal*	*$ 108,696,642*	*$ 112,685,803*	*$ 114,547,977*	*$ 117,430,889*	*479,367*	*489,877*	*505,385*	*514,721*	*5,894,409*	*6,111,926*	*6,361,029*	*6,497,992*
	Support Services												
22	Utility Oversight	$ 11,175,167	$ 11,510,422	$ 11,845,677	$ 12,180,932	-	-	-	-	-	-	-	-
23	Tracking System	1,294,778	1,333,621	1,372,465	1,411,308	-	-	-	-	-	-	-	-
24	Education and Awareness[1]	5,544,217	5,839,837	5,977,876	6,081,335	19,440	19,768	19,929	20,104	213,758	220,607	226,790	230,859
25	EM&V	7,498,055	7,722,996	7,947,938	8,172,880	-	-	-	-	-	-	-	-
26	*Support Services Subtotal*	*$ 25,512,217*	*$ 26,406,877*	*$ 27,143,956*	*$ 27,846,455*	*19,440*	*19,768*	*19,929*	*20,104*	*213,758*	*220,607*	*226,790*	*230,859*
27	***Total Energy Efficiency Portfolio***	**$ 186,992,035**	**$ 194,993,207**	**$ 199,789,153**	**$ 203,336,558**	***648,013***	***658,919***	***664,301***	***670,141***	***7,125,288***	***7,353,575***	***7,559,662***	***7,695,287***

(1) Lifetime savings for Pilots and Education & Awareness, for the Plan and Reconciliation filings, is based on first year savings multiplied by the average program measure life.

Line No.	Description	Investments				First Year Energy Savings				Lifetime Energy Savings			
		2022 ($)	2023 ($)	2024 ($)	2025 ($)	2022 (Mcf)	2023 (Mcf)	2024 (Mcf)	2025 (Mcf)	2022 (Mcf)	2023 (Mcf)	2024 (Mcf)	2025 (Mcf)
	Residential Class												
1	Appliance Recycling	$ -	$ -	$ -	$ -	-	-	-	-	-	-	-	-
2	Energy Dashboard	325,726	504,353	503,650	504,240	5,687	6,540	7,324	8,203	5,687	6,540	7,324	8,203
3	ENERGY STAR Appliances	761,749	798,477	832,885	856,332	34,717	35,989	37,893	37,857	318,204	329,999	347,515	347,610
4	ENERGY STAR Lighting	-	-	-	-	-	-	-	-	-	-	-	-
5	Home Energy Analysis	2,106,755	2,106,322	2,105,727	2,128,267	79,575	70,740	64,113	59,143	872,457	792,940	733,302	688,574
6	Home Energy Reports	1,098,205	2,306,545	1,978,447	1,905,269	156,845	171,946	156,288	174,111	156,845	171,946	156,288	174,111
7	Residential Pilot Programs[1]	10,555,196	10,882,865	11,136,398	11,491,502	541,752	553,119	566,576	579,781	7,752,205	7,921,591	8,122,874	8,313,819
8	Home Performance with ENERGY STAR	869,616	892,710	910,704	935,006	28,871	29,448	30,037	30,638	478,185	487,749	497,504	507,454
9	Income-Qualified Energy Assistance	15,750,000	17,500,000	20,000,000	22,000,000	164,148	164,159	169,610	169,643	1,986,588	1,986,643	2,084,470	2,084,635
10	Income-Qualified Multifamily	7,800,000	9,000,000	10,500,000	10,500,000	98,817	98,781	99,076	99,333	991,305	971,582	1,002,766	1,014,294
11	Insulation & Windows	2,145,492	2,186,712	2,218,648	2,280,004	56,709	57,042	57,384	58,169	1,342,116	1,348,777	1,355,609	1,371,307
12	Residential New Construction	1,199,491	1,009,225	1,040,312	1,069,387	54,313	59,884	61,864	62,921	1,043,411	1,154,628	1,192,001	1,210,946
13	Residential Marketplace	1,858,569	1,922,587	1,963,969	2,043,401	111,170	114,869	118,569	123,226	1,001,270	1,034,566	1,067,862	1,109,781
12	Residential Multifamily	1,651,760	1,652,437	1,633,053	1,630,421	91,467	91,495	92,218	92,684	781,955	786,197	798,768	807,887
13	Residential Agriculture	31,433	31,979	32,463	33,029	372	372	372	372	4,389	4,389	4,389	4,389
14	Think! Energy	1,040,404	1,071,376	1,084,421	1,125,627	109,624	114,774	120,602	127,824	721,281	747,608	778,838	822,356
15	Residential Pilot Programs[1]	3,241,545	3,537,159	3,786,797	3,950,077	101,147	103,461	104,303	107,071	1,150,938	1,170,010	1,383,675	1,217,497
16	*Residential Subtotal*	*$ 50,435,941*	*$ 55,402,746*	*$ 59,727,474*	*$ 62,452,562*	*1,635,212*	*1,672,618*	*1,686,228*	*1,730,975*	*18,606,836*	*18,915,163*	*19,533,186*	*19,682,862*
	Business Class												
17	Comprehensive Business Solutions	$ 21,553,073	$ 21,705,010	$ 21,706,154	$ 21,956,517	1,205,083	1,205,179	1,214,635	1,226,404	17,072,949	17,036,684	17,140,895	17,279,951
18	Small Business Solutions	3,062,632	3,142,576	3,203,892	3,283,895	93,710	96,235	98,759	101,284	692,163	706,590	721,017	735,444
19	Business Multifamily	850,793	908,653	850,730	852,832	65,181	67,687	64,377	63,574	498,036	503,059	489,106	480,176
20	Business Pilot Programs[1]	1,782,758	1,804,971	1,808,380	1,833,410	89,932	90,270	90,842	91,732	1,204,164	1,203,055	1,209,957	1,219,488
21	*Business Subtotal*	*$ 27,249,256*	*$ 27,561,210*	*$ 27,569,157*	*$ 27,926,654*	*1,453,906*	*1,459,371*	*1,468,614*	*1,482,993*	*19,467,312*	*19,449,388*	*19,560,976*	*19,715,059*
	Support Services												
22	Utility Oversight	$ 2,256,524	$ 2,324,220	$ 2,391,916	$ 2,459,611	-	-	-	-	-	-	-	-
23	Tracking System	261,446	269,289	277,132	284,976	-	-	-	-	-	-	-	-
24	Education and Awareness[1]	2,512,151	2,671,065	2,797,589	2,891,744	95,540	96,866	97,572	99,401	1,177,551	1,186,533	1,203,314	1,218,492
25	EM&V	1,514,030	1,559,451	1,604,872	1,650,293	-	-	-	-	-	-	-	-
26	*Support Services Subtotal*	*$ 6,544,151*	*$ 6,824,025*	*$ 7,071,509*	*$ 7,286,624*	*95,540*	*96,866*	*97,572*	*99,401*	*1,177,551*	*1,186,533*	*1,203,314*	*1,218,492*
27	***Total Energy Efficiency Portfolio***	***$ 84,229,348***	***$ 89,787,981***	***$ 94,368,140***	***$ 97,665,840***	***3,184,658***	***3,228,854***	***3,252,414***	***3,313,370***	***39,251,699***	***39,551,084***	***40,297,476***	***40,616,414***

(1) Lifetime savings for Pilots and Education & Awareness, for the Plan and Reconciliation filings, is based on first year savings multiplied by the average program measure life.

PROOF OF SERVICE

STATE OF MICHIGAN)

Case No. U-20875

County of Ingham)

Brianna Brown being duly sworn, deposes and says that on March 17, 2022 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).

Brianna Brown

Subscribed and sworn to before me
this 17th day of March 2022.

Angela P. Sanderson
Notary Public, Shiawassee County, Michigan
As acting in Eaton County
My Commission Expires: May 21, 2024

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Appendix F

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion, regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **DTE ELECTRIC COMPANY** to fully comply with Public Act 295 of 2008, as amended by Public Act Act 342 of 2016	)	Case No. U-20373

STIPULATION AND SETTLEMENT AGREEMENT

Pursuant to Section 78 of the Administrative Procedures Act of 1969 ("APA"), as amended, MCL 24.278 and Rule 333 of the Rules of Practice and Procedure before the Michigan Public Service Commission ("MPSC" or "Commission"), the undersigned parties agree as follows:

WHEREAS, This Stipulation and Settlement Agreement ("Settlement Agreement") between DTE Electric Company ("DTE"), Natural Resources Defense Council ("NRDC"), National Housing Trust ("NHT"), Sierra Club, the Ecology Center, Ecoworks, Soulardarity, and the Michigan Public Service Commission Staff ("Staff"), (collectively, the "Parties") is intended by the Parties as a final settlement and satisfaction of all issues before the Commission in the biennial review of DTE's Electric's Energy Waste Reduction Plan ("EWR Plan").

WHEREAS, On February 7, 2019, the Commission issued an Order in Case No. U-20373 requiring DTE Electric Company ("DTE Electric" or the "Company") to file its energy waste reduction plan by July 15, 2019.

WHEREAS, DTE Electric filed its application, with supporting testimony and exhibits, requesting approval of its EWR Plan on July 1, 2019 pursuant to the Commission's Order and the requirements of Act 295, as amended by Act 342.

WHEREAS, on August 2, 2019, the Commission directed DTE Electric to publish a notice of hearing in newspapers of general circulation in DTE Electric's service territory. A prehearing conference was conducted on September 4, 2019 at which a procedural schedule was adopted, and the Commission Staff, NRDC, NHT, Sierra Club, the Ecology Center, Ecoworks, Soulardarity, and DTE Electric appeared as the parties participating in this case.

WHEREAS, the Parties filed testimony about the Company's EWR savings goals and recommended revisions to DTE Electric's EWR Plan. The proposed revisions included changes to the Company's low-income programs, like the Energy Efficiency Assistance Program and the Low-Income Multifamily Program, and the spending level for these programs; changes to the Performance Incentive Mechanism; changes to the Behavior Program savings limits ; and changes to the Low-Income Health and Safety Pilot.

WHEREAS, the Parties have agreed to enter into a full settlement of this case, and request that the Commission enter an order accepting and approving DTE Electric's EWR Plan subject to the modifications as set forth in this agreement.

NOW THEREFORE, for purposes of settlement of Case No. U-20373, the Parties agree as follows:

1. The parties agree that the Company's filed 2020-2021 EWR Plan should be approved in its entirety except as modified by this Settlement Agreement and the attachments to this Settlement Agreement.

2. Low-Income Programs. DTE Electric will increase investment in the Company's Energy Efficiency Assistance (EEA) Program and Low-Income Multifamily Program by Ten Million Dollars ($10,000,000) within the 2020-2021 Plan. At a minimum, Twenty Percent (20%) of the increased investment will occur in 2020; the remaining balance will be invested in 2021. At

least Fifty Percent (50%) of the increased investment will be allocated to the Multi-Family Low-Income Program. The increased investment will be inclusive of the Heat-Pump Initiative as described in Section 7, below. Revised portfolio costs are reflected in Attachment A.

3. Multi-Family Low-Income Program. DTE Electric will implement the Multi-Family Low-Income Program enhancements set forth on Attachment B.

4. Low-Income Payment Troubled Customers. The parties agree that Company will implement the program and evaluation outlined in Attachment C to target payment troubled low-income customers.

5. Performance Incentive Mechanism. The metrics associated with the Performance Incentive Mechanism (PIM) will be as set forth in Attachment D of this Settlement Agreement. The parties agree that the metrics under the PIM are primarily based on lifetime savings targets and secondarily on low-income spend and low-income lifetime savings.

6. Behavior Savings. DTE Electric will limit behavior savings as a percentage of the residential portfolio to a maximum of 25% for 2020 and 2021.

7. Heat Pump Effort. The Company will conduct a heat pump initiative within the Energy Efficiency Assistance and Multifamily Low-Income programs in 2020 and 2021 to install heat pumps as primary heating in single family and multifamily low-income dwellings. A budget of One Million Dollars ($1,000,000) will be used over the course of 2020 and 2021 for this initiative for both single family and multifamily collectively. A custom evaluation by an independent third-party evaluator of the energy savings for this initiative will be conducted and paid for through the budget allocated for this initiative. Additional research may include determining the amount of heat produced by the heat pumps, and how much the existing electric heating source is used, the extent to which customers understand how to optimize operation of the

heat pump affected savings, and how future program design changes might improve savings. Fifty Percent (50%) of the spend for Heat Pumps will be allocated to the Multi-Family Low-Income Program. However, after September 1st of 2020 and 2021, the Company reserves the ability to allocate Heat Pump funds intended for multi-family low-income dwellings towards single family if it is determined there are challenges in achieving participation from multi-family low-income customers, and vice versa. The Heat-Pump Effort will be funded from the increased investment in the Company's Energy Efficiency Assistance (EEA) Program and Low-Income Multifamily Program described in Section 2.

8. Low-Income Health and Safety Pilot. DTE Electric will implement a Low-Income Health and Safety Pilot as proposed in the Direct Testimony of Witness Kupser. The Health and Safety pilot will be funded from pilot program spend, which is increased up to 6% of total EWR spend in 2020 and 2021. The Low-Income Health and Safety Pilot will primarily target low-income single-family homes. An amount ranging from $100,000 to $150,000 of the pilot spend is allocated for multi-family housing, however, this number may be reduced in the following manner: after September 1st of 2020 and July 1st of 2021, the Company reserves the ability to allocate Low-Income Health and Safety Pilot funds intended for multi-family low-income dwellings toward single family, if it is determined there is a lack of participation from multi-family dwellings or the pilot launch is delayed, and vice versa.

The Low-Income Health and Safety Pilot will include reporting on both single-family and multi-family of the following information: Number of participating properties; types of repairs identified; cost of repairs identified; repairs completed; repairs not completed; reason repairs not completed; and energy efficiency measures that were able to be installed as a result of the repairs

and associated savings values. In addition, the Company will research the impacts of the health and safety pilot on appropriate non-energy impacts.

9. Non-Wires Alternative. DTE Electric will continue the Non-Wires Alternative Pilot per the Settlement Agreement detailed in MPSC Case No. U-18262.

10. All-Electric New Homes. DTE commits to spending up to $250,000 on a pilot project to assess market barriers to, incremental costs of and energy performance of very efficient all-electric new homes. The pilot will include financial incentives to help address both the higher cost of more efficient buildings and equipment, as well as technical assistance and evaluation. The Company will work with Staff, NRDC and interested signatory stakeholders on the design of the pilot. The aim will be to construct a demonstrable number of homes that both have more efficient building envelopes and are heated with air source cold climate heat pumps. The Company will have the flexibility to implement this pilot anywhere within its electric service territory except in areas where natural gas provided by another utility is available. Ideally, the project will include homes built by both affordable housing developers and market-rate builders. However, the final mix of builders will ultimately need to reflect interest and demand given the program offerings. If Company does not have any interested developers by end of Q3 2020, DTE reserves the right to repurpose this pilot spend.

11. The Company will schedule a kick-off meeting and quarterly check-ins to update interested parties on progress and discuss possible project refinements regarding the Low-Income Payment Troubled Customers Program, Multi-Family Low-Income Program, Low-Income Health and Safety Pilot, All-Electric Homes Pilot, and Heat Pump Effort. The Company will also schedule annual check-ins after its launch to the MPSC Low-Income EWR Collaborative when appropriate. These updates will include a progress report, highlighted barriers and areas of program

improvement where the Company is struggling or would like help or ideas, and the soliciting of input/feedback from participants.

12. The level of EWR should be determined in a MPSC approved integrated resource plan (IRP). If there is not an approved IRP for the EWR plan filing years, the Company will commit to its original filed position of 1.625% in 2020 and 1.75% in 2021.

13. The Parties agree that DTE Electric will begin to charge the 2020-2021 EWR base rates proposed in this Plan effective with bills rendered in March 2020. The total EWR charge implemented will consist of the base rate and the 2018 performance incentive component approved in Case No. U-20366 (Order dated January 23, 2020), as set forth in Attachment E. Actual revenues and costs will be included in the annual reconciliation.

14. This Settlement Agreement is entered into for the sole and express purpose of reaching a compromise among the Parties. All offers of settlement and discussions relating to this Settlement Agreement are considered privileged under MRE 408. If the Commission approves this Settlement Agreement without modification, neither the Parties to this settlement nor the Commission shall make any reference to, or use this Settlement Agreement or the order approving it, as a reason, authority, rationale, or example for taking any action or position or making any subsequent decision in any other case or proceeding; provided however, such references may be made to enforce or implement the terms of the Settlement Agreement and the order approving it.

15. This Settlement Agreement is not severable. Each provision of this Settlement Agreement is dependent upon all other provisions of this Settlement Agreement, including the attachments. Failure to comply with any provision of this Settlement Agreement, including commitments phrased in firm language (such as “shall” or “will”) in the attachments, constitutes failure to comply with the entire Settlement Agreement. If the Commission rejects or modifies

this Settlement Agreement, this Settlement Agreement shall be deemed to be withdrawn, and shall not constitute any part of the record in this proceeding or be used for any other purpose, and shall not operate to prejudice the pre-negotiation positions of any party.

16. This Settlement Agreement is reasonable and in the public interest, and will reduce the time and expense of the Commission, its Staff, and the Parties.

17. The Parties agree to waive Section 81 of 1969 PA 306 (MCL 24.281), as it applies to the issues in this proceeding, if the Commission approves this Settlement Agreement without modification.

18. This Settlement Agreement may be executed in any number of counterparts, each considered an original, and all counterparts that are executed shall have the same effect as if they were the same instrument.

IN WITNESS WHEREOF, the Parties have caused this Settlement Agreement to be duly executed by their respective duly authorized officers as of the date first written below.

DTE ELECTRIC COMPANY

By: _____ Dated: _____, 2020

Megan E. Irving (P75232)
David S. Maquera (P66228)
DTE Electric Company
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MICHIGAN PUBLIC SERVICE COMMISSION STAFF

By: Spencer Sattler Digitally signed by Spencer Sattler Date: 2020.02.13 17:00:52 -05'00' Dated: February 13, 2020

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SOULARDARITY

By: _____ Dated:_____, 2020

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Attachment A: Revised Low-Income Program Costs[1]

Energy Waste Reduction Programs	2020 Filing Cost ($000)	2020 Cost Increase ($000)	2020 Final Cost ($000)	2021 Filing Cost ($000)	2021 Cost Increase ($000)	2021 Final Cost ($000)
Low Income						
Low Income attributed to Energy Efficiency Assistance	$8,226	$1,500	$9,726	$8,270	$3,500	$11,770
Low Income attributed to Multifamily Units	3,131	1,500	4,631	3,765	3,500	7,265
Low Income attributed to Home Energy Consultation	3,026		3,026	3,138		3,138
Low Income Administrative and Infrastructure	332		332	340		340
Low Income Program Total	$14,713	$3,000	$17,713	$15,513	$7,000	$22,513

Note: A budget of One Million Dollars ($1,000,000) will be used over the course of 2020 and 2021 for the heat pump initiative, funded from the cost increase for the Low Income attributed to Energy Efficiency Assistance and Low Income attributed to Multifamily Units, collectively.

[1] At a minimum, Twenty Percent (20%) of the increased investment will occur in 2020 as described in Section 1 of this settlement document. The revised low-income program costs in this attachment reflect a scenario with Thirty Percent (30%) of the increased investment occurring in 2020.

Attachment B: Multi-Family Low-Income Program Changes

The Multifamily Low-Income program provides a comprehensive approach to meet customers' needs for energy efficient equipment to achieve deep energy savings, through direct installation of energy-efficient measures, and rebates for prescriptive and custom projects that benefit residential customers living in multifamily buildings. Many of the activities are guided by a concierge charged with ensuring a streamlined easy-to-navigate process for all program participants.

For direct install, efficient equipment will be installed directly in the units, as well as internal and external common area spaces. The primary measures to be installed will be water saving measures, hot water pipe wrap, lighting and programmable thermostats where appropriate. For Common Area and In-unit prescriptive and custom measures, incentives are substantially increased compared to non-low-income incentives to spur deep saving investments. Building owners will be responsible for paying a portion of the cost of the installed common area measures. There will be no cost for most in-unit prescriptive measures or certain common area direct install measures.

More specifically, the program is designed to:

- Produce comprehensive, whole-building savings that meet customer needs across all fuels and parts of the building, regardless of the metering arrangement.
- Provide direct installation of efficiency measures in multifamily rental properties.
- Provide energy information, education to tenants and building operators on how to save on their energy bills.
- Ensure that the participation process is clear, easy to understand and simple.
- Cover a portion or all the cost of the efficiency improvements for non-direct install common area and in-unit measures.

1. Reporting
    a. DTE Energy will track and share data with NHT, NRDC, and Ecology Center at the agreed upon quarterly updates to provide input and foster further program discussions. Data reported, which may be changed upon mutual agreement between the Companies and NHT, NRDC, and Ecology Center, will include but is not limited to the following data specific to the IQMF:

        <u>Property Level Data</u>

        i. # of properties and units served – for a single property all savings and measures will be reported together
        ii. # of properties that received a Level I energy assessment
        iii. # of properties that received a Level II energy assessment
        iv. # of properties that installed 2 or more prescriptive or custom measures
        v. # of subsidized and unsubsidized properties participating

        <u>Measure Level Data</u>

        vi. # of properties reported above that received incentives in the following categories:

1. HVAC
    a. Furnaces
    b. Boilers
    c. Heat pumps
    d. Central AC
    e. Window AC
    f. Insulation
    g. Air Sealing
    h. Windows
2. Lighting
    a. In-unit direct install
    b. In-unit prescriptive/custom
    c. Common area direct install
    d. In-unit prescriptive/custom
    e. Exterior
3. Domestic Hot Water
4. Appliances
    a. Refrigerators
    b. Clothes washer
    c. Clothes dryer
5. Custom

vii. Conversion rates:
    1. Overall conversion rate aka what % of properties moved from assessment/direct install to prescriptive/custom, separately for:
        a. Concierge started projects
        b. Trade Ally started projects.
    2. Track measure recommendations for energy assessment reports issued March 1, 2020-March 31 2020 (first full month of this program cycle) and then of that sample, what are the conversion rates by measure type in those properties by April 30, 2021.

viii. Total # of installations, in the properties reported above, for each DI measure

ix. # of properties that participated only in direct install

x. # of properties that received only prescriptive or custom incentives

xi. # of properties that received both direct install and prescriptive and/or custom incentives

<u>Investment Data</u>

xii. Total incentive spending (by fuel) –

xiii. Total non-incentive spending (by fuel)

xiv. Incentives as a portion of total actual or estimated installed cost of measures for those customers as reported by customers (including both materials and labor) -
    1. For direct install (assume 100% covered)
    2. For prescriptive/custom -
    3. Overall (direct install and prescriptive/custom)

<u>Savings Data</u>

xv. MWh savings achieved in paid installations
xvi. Mcf savings achieved in paid installations
xvii. Average % savings of total energy use per property (by fuel)

Outreach Data

xviii. # of electronic program inquires received
xix. # of site visits completed by outreach staff
xx. # of conversations with MSHDA staff
xxi. Information on Multifamily Low-Income collaboration efforts, presented in coordination with Consumers Energy

2. Co-delivery
    a. If Consumers agrees to do the following for its IQ MF starting in January 2021 at the latest, reciprocally, DTE will also agree to do so on the same timeline, and vice versa (applies to each item individually, not all or nothing):
        i. Collaborative Assessment and Report
            1. DTE energy assessment will screen for both potential electric and potential gas improvements when Consumers is the provider of one of those fuels.
            2. DTE energy assessment report will include all recommended available rebates from both fuels when Consumers is the provider of one of those fuels.
        ii. Collaborative Application
            1. DTE agrees to meet with Consumers to explore additional collaboration opportunities related to their IQMF programs.
        iii. Continue collaborative Direct Install
            1. Delivery of both gas and electric direct install items via a single visit (whether by one or more installers) regardless of which utility provides which service.
            2. The Company will collaborate with Consumers Energy on determining if a MEMD measure can be presented to the technical subcommittee for leased laundry equipment. This is subject to Consumers Energy agreeing to participate in shared costs and evaluation.
3. Coordination with funding/financing
    a. The Company agrees to stay up to date on and present relevant and current financing options to program participants who may be in need of energy efficiency financing.
    b. The Company agrees to link interested program participants to financing providers via three-way calls or other direct connections (warm hand-off) rather than by merely providing a fact sheet or contact information (cold hand-off) if the customer is interested and willing.
4. Michigan Saves financing
    a. The Company agrees to make a Michigan Saves interest rate buydown to 0% available to electric and gas Multifamily Low-Income program participants.
    b. Financing costs will be deducted from the rebate amount the customer receives. The customer will be allowed to decide whether they prefer to receive only rebates or have the interest rate buy-down displace some or all of the rebates.

5. The Company will provide program participants with information on the benefits of using the Company's landlord utility data manager, which provides access to usage data, and on how to enroll.
6. Water upgrades
    a. If the Company becomes aware that a municipal government or water utility in one of its service territories is offering rebates for toilet replacement, the Company will reach out to that entity to discuss potential partnership between the programs. (e.g. The Detroit Water and Sewerage Department is "in the process of designing a citywide toilet replacement program and will announce it at a later date" according to the City's website.)
7. ASHRAE Level 2 audits
    a. The Company will accept Level 1 assessment results or the equivalent from outside entities as a substitute for the Company's own Level 1 assessment as the basis for entry into the program.
    b. The Company will accept ASHRAE Level 2 audit results from outside entities as the basis for entry into the program, provided the property, audit, and/or implementer meet certain standards to be specified by the Company.
    c. The Company agrees to fund ASHRAE Level 2 audits from outside entities, but the Company must assess need for ASHRAE Level 2 audit and approve audit before it is performed
8. Closer collaboration and alignment with MSHDA
    a. The Company agrees to provide current program information and up-to-date contact information to MSHDA staff on a bi-annual basis and learn more about MSHDA's offerings/services.
    b. The Company agrees to explore ways to remove barriers to properties simultaneously participating in LIHTC refinancing and in the Company's program.
9. Caps
    a. The Company agrees to institute a new policy for caps to rebate amounts. The new cap will be $100,000 per property or $2,000 per unit, whatever is higher. Rebates for heat pumps installed as part of the heat pump effort described in Section 6 of this settlement agreement will not count toward caps. Customers who are participating in Low-Income Housing Tax Credit financing/re-financing will not be subject to the cap.
10. Laundry:
    a. In 2020, the Company will begin collecting information regarding when leases end for common area laundry equipment as part of their IQ MF energy assessments.
11. Marketing Clusters
    a. Company agrees to target market Multifamily IQ properties that have clusters of customers in arrears if the Company's Multifamily clustering project from 2018 – 2019 data supports it.

Attachment C: Low-Income Program Changes

The DTE Energy Waste Reduction (EWR) group will coordinate with the DTE Revenue Management and Protection (RM&P) group to provide energy efficiency services to payment troubled customers participating in the Low-Income Self-Sufficiency Plan (LSP) and Shutoff Protection Plan (SPP). The intent of this initiative is to help payment troubled customers better manage their energy burden through the coordinated combination of low-income payment plans and EWR services. The program will target customers beginning in February 2020 until December 2021 and will aim to provide services to 500 LSP/SPP customers annually. Approximately 25% of total EEA spend will be used toward the Payment Troubled Customers EWR Initiative.

Initiative Goals:

- Understand the impacts of EEA and Multifamily EWR programs on customer energy consumption.
- Understand the impacts of EEA and Multifamily EWR programs to enable Michigan Energy Assistance Program (MEAP) dollars to reach more customers.
- Understand the impacts of EEA and Multifamily EWR programs to reduce customer reliance on SER utility assistance.
- Understand the impacts of EEA and Multifamily EWR programs on customer accounts remaining active in the 12 months following Low-Income Self-Sufficiency Plan (LSP) and Shutoff Protection Plan (SPP) participation.
- Understand the impacts of EEA and Multifamily EWR programs to increase the % of on-time payments following LSP and SPP participation.
- Understand the impacts of EEA and Multifamily EWR programs on % of customer monthly payment defaults on the SPP.

LSP Customer Identification Process:

For LSP customers, the Company will target new LSP customers, existing LSP customers with trending high usage and prospective LSP customers who are income qualified but are over energy use requirements. The Company reserves the right to make changes to the below criteria at any time to ensure the appropriate customers are targeted. All changes will be communicated to parties during the quarterly check-ins.

- New LSP Customers
    - Customer contacts a participating LSP intake organization
    - Customer receives SER
        - Enrolls directly through MIBridges.com, via CAA, or at an on-site CAD event
        - SER is applied to past due balance
    - For customers with <$3k in arrears, enroll in DTE Low-Income Self Sufficiency Plan (LSP)

    - DTE RM&P group provides DTE EWR team(s) with a weekly list of new LSP customers for enrollment in either EEA (single-family) or the DTE multi-family energy assistance program. Customer list data requirements:
        - Customer name
        - Account number
        - Address
        - Phone Number(s)
        - Email address
    - Depending on control group design, not everyone on the outreach list may receive information on EWR programs.
- Existing LSP Customers
    - Criteria
        - 12 months or more remaining on LSP
        - RM&P group will aim to identify customers on LSP who have energy usage trending above initial intake levels
            - Gas: $179, Electric: $133, Dual: $313
    - DTE RM&P group provides DTE EWR team(s) with a list of existing LSP customers for enrollment in either EEA (single-family) or the DTE multi-family energy assistance program. Customer list data requirements:
        - Customer name
        - Account number
        - Address
        - Phone Number(s)
        - Email address
    - Depending on control group design, not everyone on the outreach list may receive information on EWR programs.
- Prospective LSP Customers
    - Criteria:
        - Meet LSP arrears requirement
        - Meet LSP assistance requirement (SER)
        - Up to 25% over LSP consumption requirement
        - FPL less than or equal to 150%
    - DTE RM&P group provides DTE EEA team with a list of prospective LSP customers for enrollment in either EEA (single-family) or the DTE multi-family energy assistance program. Customer list data requirements:
        - Customer name
        - Account number
        - Address
        - Phone Number(s)
        - Email address
    - Depending on control group design, not everyone on the outreach list may receive information on EWR programs.

SPP Customer Identification Process:

For SPP customers, the Company will target existing SPP customers who meet criteria determined by the RM&P group for a customer in need of assistance. The Company reserves the right to make changes to the below criteria at any time to ensure appropriate customers are targeted. All changes will be communicated to parties during the quarterly check-ins.

- Existing SPP Customers
    - Criteria:
        - Arrears <= 50% of Monthly Plan Amount
        - Budget Billing <= $313 (dual commodity)
        - No assistance (State or Federal)
        - FPL between 151-200%
- DTE RM&P group provides DTE EWR team(s) with a list of targeted SPP customers for enrollment in either EEA (single-family) or the DTE multi-family energy assistance program. Customer list data requirements:
    - Customer name
    - Account number
    - Address
    - Phone Number(s)
    - Email address
- Depending on control group design, not everyone on the outreach list may receive information on EWR programs.

Potential Outreach and Enrollment Channels:

- Weekly LSP/SPP lists are provided to specific partner organizations, based on customer type and location, to contact/qualify customers and schedule initial energy audit.
    - Participating intake organizations conduct customer outreach via various communication channels, as deemed necessary. These may include, but are not limited to:
        - Email
        - Phone call
        - Text message
        - Direct mail
        - Door hangers
- LSP/SPP call center proactively refers inbound phone calls from LSP/SPP customers to participating EEA and multi-family intake organizations, based on customer location.
- LSP/SPP call center provides outbound phone calls to promote EWR programs.
- Customer recruitment at Customer Assistance Day (CAD) events.

EWR Program Services

- Single-family customers receive home weatherization services under EEA, which may include, but is not limited to:

    - Direct install measures, as appropriate
    - Insulation (encouraged, if applicable)
    - Air sealing (encouraged, if applicable)
    - Heating system test and tune or replacement (encouraged, if applicable)
    - New water heater (encouraged, if applicable)
    - New refrigerator (encouraged, if applicable)
    - Window repair and/or replacement (encouraged, if applicable)
    - Programmable thermostat (if applicable)
    - Other Energy Efficient measures as deemed appropriate
- Multi-family customers (identified by address) receive weatherization services under the Low-Income Multi-Family program, which may include, but is not limited to:
    - Direct install measures, as appropriate based on fuel type
    - Programmable thermostat, if applicable, based on fuel type
    - New water heater (in-unit only, based on fuel type and if fuel in tenant name)
    - New refrigerator (based on fuel type and if fuel in tenant name)
    - Other Energy Efficient measures as deemed appropriate
- Customers will be eligible to receive money through the DTE Health and Safety pilot, as appropriate and if funds are available.

Reporting:

1. Data reported during the quarterly meetings shall include, but is not limited to, the following for single-family and multi-family households served:
    - # of payment troubled customers served:
        - through LSP
        - through SPP
    - $ spend on payment troubled customers
        - through LSP
        - through SPP
    - Average arrears for payment troubled customers at time EWR services rendered
    - Average energy consumption/usage per payment troubled customer at time EWR services rendered
        - Average Electric Usage per customer
        - Average Gas Usage per customer
    - Arrears balance payment, month over month
    - Types of EWR services provided
    - Total number of EWR services provided
    - Average # of measures per customer
    - Deemed average electric savings per customer
    - Deemed average gas savings per customer
    - Average change in energy consumption/usage per customer after EWR services are rendered
    - # of walkaways; and whether they were referred to Health and Safety pilot
    - Late payment data

- Number of customers kicked off of BudgetWise (once the customer has transitioned to BudgetWise billing)

Evaluation:

- The Company and intervenors will work with a 3^{d} party evaluator to determine evaluation needs and provide an overview of the evaluation plan at the first quarterly meeting. The Company reserves the ability for final decision made to the evaluation needs.
- The Company will file an interim evaluation report in their 2020 reconciliation filing; a Final evaluation report will be filed with the Michigan Public Service Commission in a reconciliation filing.
- The Company shall seek commission approval to continue collecting data on the Payment Troubled Customers EWR initiative in its 2022/2023 EWR plan. This is contingent upon the Company having an approved 2022/2023 EWR plan. The Company shall also seek commission approval to continue the Payment Troubled Customers EWR initiative, or some version thereof, in its 2022/2023 EWR plan. This is contingent upon the Company having an approved 2022/2023 EWR plan.

Attachment D: Electric Performance Incentive Mechanism

	Legislative First Year Savings Tiers		Lifetime Savings (MWH)		Low-Income Spend* ($1,000)		Low-Income Lifetime Savings (MWH)	
			Minimum (100%)		Minimum (100%)		Minimum (100%)	
			YR 2020	4,676,672	YR 2020	$11,142	YR 2020	58,537
			YR 2021	4,652,102	YR 2021**	$15,676	YR 2021	58,791
			Weight	80%	Weight	10%	Weight	15%
	% Savings	% Incentive	% Savings	% Incentive	% Spend	% Incentive	% Spend	% Incentive
Tier 1	**1.00%**	**15.00%**	100%	12.00%	100%	1.00%	100%	2.00%
	1.01%	15.10%	101%	12.08%	101%	1.02%	101%	2.02%
	1.02%	15.20%	102%	12.16%	102%	1.04%	102%	2.04%
	1.03%	15.30%	103%	12.24%	103%	1.06%	103%	2.06%
	1.04%	15.40%	104%	12.32%	104%	1.08%	104%	2.08%
	1.05%	15.50%	105%	12.40%	105%	1.10%	105%	2.10%
	1.06%	15.60%	106%	12.48%	106%	1.12%	106%	2.12%
	1.07%	15.70%	107%	12.56%	107%	1.14%	107%	2.14%
	1.08%	15.80%	108%	12.64%	108%	1.16%	108%	2.16%
	1.09%	15.90%	109%	12.72%	109%	1.18%	109%	2.18%
	1.10%	16.00%	110%	12.80%	110%	1.20%	110%	2.20%
	1.11%	16.10%	111%	12.88%	111%	1.22%	111%	2.22%
	1.12%	16.20%	112%	12.96%	112%	1.24%	112%	2.24%
	1.13%	16.30%	113%	13.04%	113%	1.26%	113%	2.26%
	1.14%	16.40%	114%	13.12%	114%	1.28%	114%	2.28%
	1.15%	16.50%	115%	13.20%	115%	1.30%	115%	2.30%
	1.16%	16.60%	116%	13.28%	116%	1.32%	116%	2.32%
	1.17%	16.70%	117%	13.36%	117%	1.34%	117%	2.34%
	1.18%	16.80%	118%	13.44%	118%	1.36%	118%	2.36%
	1.19%	16.90%	119%	13.52%	119%	1.38%	119%	2.38%
	1.20%	17.00%	120%	13.60%	120%	1.40%	120%	2.40%
	1.21%	17.10%	121%	13.68%	121%	1.42%	121%	2.42%
	1.22%	17.20%	122%	13.76%	122%	1.44%	122%	2.44%
	1.23%	17.30%	123%	13.84%	123%	1.46%	123%	2.46%
	1.24%	17.40%	124%	13.92%	124%	1.48%	124%	2.48%
Tier 2	**1.25%**	**17.50%**	125%	14.00%	125%	1.50%	125%	2.50%
	1.26%	17.60%	126%	14.08%	126%	1.52%	126%	2.52%
	1.27%	17.70%	127%	14.16%	127%	1.54%	127%	2.54%
	1.28%	17.80%	128%	14.24%	128%	1.56%	128%	2.56%
	1.29%	17.90%	129%	14.32%	129%	1.58%	129%	2.58%
	1.30%	18.00%	130%	14.40%	130%	1.60%	130%	2.60%
	1.31%	18.10%	131%	14.48%	131%	1.62%	131%	2.62%
	1.32%	18.20%	132%	14.56%	132%	1.64%	132%	2.64%
	1.33%	18.30%	133%	14.64%	133%	1.66%	133%	2.66%
	1.34%	18.40%	134%	14.72%	134%	1.68%	134%	2.68%
	1.35%	18.50%	135%	14.80%	135%	1.70%	135%	2.70%
	1.36%	18.60%	136%	14.88%	136%	1.72%	136%	2.72%
	1.37%	18.70%	137%	14.96%	137%	1.74%	137%	2.74%
	1.38%	18.80%	138%	15.04%	138%	1.76%	138%	2.76%
	1.39%	18.90%	139%	15.12%	139%	1.78%	139%	2.78%
	1.40%	19.00%	140%	15.20%	140%	1.80%	140%	2.80%
	1.41%	19.10%	141%	15.28%	141%	1.82%	141%	2.82%
	1.42%	19.20%	142%	15.36%	142%	1.84%	142%	2.84%
	1.43%	19.30%	143%	15.44%	143%	1.86%	143%	2.86%
	1.44%	19.40%	144%	15.52%	144%	1.88%	144%	2.88%
	1.45%	19.50%	145%	15.60%	145%	1.90%	145%	2.90%
	1.46%	19.60%	146%	15.68%	146%	1.92%	146%	2.92%
	1.47%	19.70%	147%	15.76%	147%	1.94%	147%	2.94%
	1.48%	19.80%	148%	15.84%	148%	1.96%	148%	2.96%
	1.49%	19.90%	149%	15.92%	149%	1.98%	149%	2.98%
Tier 3	**1.50%**	**20.00%**	150%	16.00%	150%	2.00%	150%	3.00%

Note: The financial incentive is calculated by adding up the percentages earned in each of the 3 metrics. The incentive earned is the lesser of the percentage earned for Legislative First Year Savings Tiers or the combined percentages earned in the 3 other metrics. The total incentive award can not exceed the award based on the Company's Legislative First Year Savings Tiers achieved. The Lifetime Savings metric and Low-Income Lifetime Savings metric reflect LED measure lives in the 2020 MEMD. In the event residential LED measure lives are adjusted in the MEMD, the Company will modify the Lifetime Savings metric and Low-Income Lifetime Savings metric accordingly.

*The Low-Income Spend metric is contingent upon spending at least 80% of the Low-Income Multi-Family incentive dollars on non-direct-install measures.

**The 2021 Low-Income Spend metric minimum will be reduced based on any amount spent in 2020 above the 150% Low-Income Spend metric, divided by 1.5 (*i.e.*, $2021\ Low\text{-}Income\ Spend\ Minimum = \$15{,}676 - \frac{2020\ Actual\ Low\text{-}Income\ Spend - \$16{,}713}{1.5}$).

Attachment E:

SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE (Contd.)

C9.6 Energy Waste Reduction Surcharge (EWRS)

On June 2, 2009, in Case No. U-15806, the MPSC authorized the implementation of an Energy Optimization Surcharge (EOS) for electric customers in accordance with the Clean, Renewable, and Energy Efficiency Act, PA295 of 2008. In compliance with PA 342 of 2016, the surcharge has been renamed as the Energy Waste Reduction (EWR) Surcharge. The EWR will be used to fund energy efficiency programs for DTE Electric customers. The EWR rates approved by the MPSC on _____, ***2020 in Case No. U-20373*** will be effective beginning with bills rendered in ***March 2020***. The total EWRS for all residential customers is $0.00***5118***per kWh. The EWRS for all metered Commercial, Industrial, and Governmental customers is a per meter, per month charge which is based on the total monthly energy consumption by rate as shown in the table below. The EWRS for unmetered Commercial and Governmental service is a monthly per customer charge based on the total monthly energy consumption by rate as shown in the table below.

Voltage	Monthly Consumption	Customers Without Self Directed Plans Energy Waste Reduction Surcharge	Customers With Self Directed Plans Energy Waste Reduction Surcharge
Secondary	0 – 850 kWh	***$1.83***/meter/month	***$0.22***/meter/month
Secondary	851 – 1,650 kWh	***$10.97***/meter/month	$***1.25***/meter/month
Secondary	Above 1,650 kWh	***$45.62***/meter/month	$***5.50***/meter/month
Primary	0 – 11,500 kWh	***$78.23***/meter/month	$***4.75***/meter/month
Primary	Above 11,500 kWh	***$825.97***/meter/month	***$48.81***/meter/month

C9.7.6 **HOLD FOR FUTURE USE**

(Continued on Sheet No. C-69.00)

(Continued from Sheet No. C-69.00)

C9 SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE: (Contd.)

C9.8 Summary of Surcharges and Credits: Summary of surcharges and credits, pursuant to sub-rules C9.1, C9.2, C9.6, C9.7.9, C9.7.10, C9.7.11, C9.7.12 and C9.7.13. Cents per kilowatthour or percent of base bill, unless otherwise noted.

	NS ¢/kWh	EWRS ¢/kWh	Total Delivery Surcharges ¢/kWh	LIEAF Factor $/Billing Meter
Residential				
D1 Residential	0.0827	*0.5118*	*0.5945*	$0.93
D1.1 Int. Space Conditioning	0.0827	*0.5118*	*0.5945*	N/A
D1.2 Time of Day	0.0827	*0.5118*	*0.5945*	$0.93
D1.6 Special Low Income Pilot	0.0827	*0.5118*	*0.5945*	$0.93
D1.7 Geothermal Time-of-Day	0.0827	*0.5118*	*0.5945*	N/A
D1.8 Dynamic Peak Pricing	0.0827	*0.5118*	*0.5945*	$0.93
D1.9 Electric Vehicle	0.0827	*0.5118*	*0.5945*	N/A
D2 Space Heating	0.0827	*0.5118*	*0.5945*	$0.93
D5 Wtr Htg	0.0827	*0.5118*	*0.5945*	N/A
D9 Outdoor Lighting	0.0827	*0.5118*	*0.5945*	N/A
Commercial				
D1.1 Int. Space Conditioning	0.0827	See C9.6		$0.93
D1.7 Geothermal Time –of- day	0.0827	See C9.6		$0.93
D1.8 Dynamic Peak Pricing	0.0827	See C9.6		$0.93
D1.9 Electric Vehicle	0.0827	See C9.6		$0.93
D3 General Service	0.0827	See C9.6		$0.93
D3.1 Unmetered	0.0827	See C9.6		N/A
D3.2 Educ. Inst.	0.0827	See C9.6		$0.93
D3.3 Interruptible	0.0827	See C9.6		$0.93
D4 Large General Service	0.0827	See C9.6		$0.93
D5 Wtr Htg	0.0827	See C9.6		$0.93
D9 Outdoor Lighting	0.0827	See C9.6		*N/A*
R3 Standby Secondary	0.0827	See C9.6		$0.93
R7 Greenhouse Lighting	0.0827	See C9.6		$0.93
R8 Space Conditioning	0.0827	See C9.6		$0.93
Industrial				
D6.2 Educ. Inst.	0.0827	See C9.6		$0.93
D8 Interruptible Primary	0.0827	See C9.6		$0.93
D10 Schools	0.0827	See C9.6		$0.93
D11 Primary Supply	0.0827	See C9.6		$0.93
R1.1 Metal Melting	0.0827	See C9.6		$0.93
R1.2 Electric Process Heating	0.0827	See C9.6		$0.93
R3 Standby Primary	0.0827	See C9.6		$0.93
R10 Interruptible Supply	0.0827	See C9.6		$0.93

(Continued on Sheet No. C-71.00)

(Continued from Sheet No. C-70.00)

C9 SURCHARGES AND CREDITS APPLICABLE TO DELIVERY SERVICE: (Contd.)

C9.8 Summary of Surcharges and Credits (Contd.):

	NS ¢/kWh	EWRS ¢/kWh	LIEAF Factor $/Billing Meter
Governmental			
E1 Streetlighting Option I	0.0827	See C9.6	N/A
E1 Streetlighting Option II & III	0.0827	See C9.6	N/A
E1.1 Energy Only	0.0827	See C9.6	$0.93
E2 Traffic Lights	0.0827	See C9.6	N/A
Electric Choice			
EC2 Secondary			
EC2 D1.1 Int. Space Conditioning	0.0827	See C9.6	$0.93
EC2 D1.7 Geothermal Time of Day	0.0827	See C9.6	$0.93
EC2 D1.9 Electric Vehicle	0.0827	See C9.6	$0.93
EC2 D3 General Service	0.0827	See C9.6	$0.93
EC2 D3.2 Educ. Inst.	0.0827	See C9.6	$0.93
EC2 D3.3 Interruptible	0.0827	See C9.6	$0.93
EC2 D4 Large General Service	0.0827	See C9.6	$0.93
EC2 D5 Wtr Htg	0.0827	See C9.6	$0.93
EC2 R7 Greenhouse Lig	0.0827	See C9.6	$0.93
EC2 Space Conditioning	0.0827	See C9.6	$0.93
EC2 Primary			
EC2 D6.2 Educ. Inst.	0.0827	See C9.6	$0.93
EC2 D8 Interruptible Primary	0.0827	See C9.6	$0.93
EC2 D10 Schools	0.0827	See C9.6	$0.93
EC2 D11 Primary Supply	0.0827	See C9.6	$0.93
EC2 R1.1 Metal Melting	0.0827	See C9.6	$0.93
EC2 R1.2 Electric Process Htg	0.0827	See C9.6	$0.93
EC2 R10 Interruptible Supply	0.0827	See C9.6	$0.93
EC2 Residential	0.0827	*0.511¢*	$0.93

(Continued on Sheet No. C-72.00)